THE

AMERICAN FARMER:

DEVOTED TO

AGRICULTURE, HORTICULTURE AND RURAL ECONOMY.

[FIFTH SERIES.]

"O FORTUNATOS NIMIUM SUA SI BONA NORINT
"AGRICOLAS." . . . . . *Virg.*

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APRIL.

"Wide flush the fields; the softening air is balm;
Echo the mountains round; the forest smiles;
And every sense, and every heart is joy."

With the new season, we go out with new hopes to our labour. The springing grass, the budding trees, the opening blossoms, all give us argument and assurance that our labours need not be in vain. The grass does not grow of itself, the tree has no power to unfold its leaves or the rose bush its flowers, but we know that they spring anew at the word of His mouth, who, having begun this new work, is able to carry it to its consummation, and we go to our labour faithfully and hopefully. The husbandman is of necessity a man of faith. He would not throw a seed upon the ground, or plough a furrow, if he did not trust the promises of Him whose overruling providence "ordereth all things in Heaven and earth."

WORK ON THE FARM.

PLOUGHING.

The general breaking up of the ground to be planted in hoed crops, should be completed, if not already done, as early as possible. The Tobacco land should be ploughed first, that it may have the longer to lie before the second ploughing at planting. As soon as the Corn ploughing is completed, the preparation for planting should begin.

THE CORN CROP.

A corn grower in Virginia writes us word, that a careful attention to our notes of last April, on a large portion of his crop, had given a sufficient increase to pay his subscription to the *Farmer* for the remainder of his life, however long it may be. Our suggestions related, in the first place, to a most thorough preparation, by harrowing and rolling, before planting. The ground should be in such condition as will give the young plants the very best opportunity of developing themselves in the early stage of their growth. The tender rootlets are then in most need of a mellow soil to spread in.

DISTANCE OF PLANTING.

The prejudice against close planting has grown out of our faulty method of cultivation. If we will continue to destroy the roots of corn after the ear begins to form, under pretence of destroying grass, the wider we plant the more likely is the corn to recover from such treatment. If, however, we prepare thoroughly, and work quickly, finishing before harvest, three and a half feet each way will give room enough and make more corn than any greater distance.

MANURING.

Whatever manure is to be applied broadcast, should be put upon the surface after the first ploughing and worked in with the surface cultivation. Being well manured broadcast and thoroughly prepared, manuring in the hill will not be necessary. Whatever manures are used should be got upon the land as early in the season as possible.

TOBACCO BEDS.

Give these a dressing of fine compost or of guano as soon as the plants are well up, and nurse them well. Pick them thoroughly as soon as the grass has started, and top-dress after each picking.

OATS AND BARLEY.

The crop of Oats and Barley should be sown at the earliest practicable period, if not already done.

CLOVER SEED.

Clover Seed to be sown now on wheat, should be rolled in, the harrow having been previously used to break the surface. When sown with

oats, let the Clover Seed follow the harrowing, and be brushed or rolled in.

ROOT CROPS.

No one having cattle or sheep to winter, should fail to have a crop of roots of some sort. Carrots, parsnips, sugar beet and mangold wurtzel, are all good crops, if well cultivated. Their advocates have lauded them too extravagantly. —We once heard an agricultural philosopher (whose wisdom developed itself chiefly in the sale of fertilizers) assure an anxious inquirer that, with proper management, (including, of course, a liberal purchase of manure,) he might expect a crop of two to three thousand bushels of carrots to the acre. Professor Mapes, with his super-phosphates, has not exceeded twelve hundred bushels, and our opinion is, that five hundred is as much as may be expected under ordinary management and tolerably liberal manuring. Of sugar beet and mangold wurtzel larger crops may be made. All require very deep ploughing and sub-soiling, and very liberal manuring, to ensure a large crop. The ground should be got in readiness this month and planted by the 1st of May.

PLAISTER.

Sow Plaister on clover fields when the young leaves begin to show themselves, and in the morning when damp with dew.

HORSES AND WORKING STOCK.

These will require especial care during this month. The hard labour of ploughing is especially trying at this season.

COWS, EWES AND SOWS.

These will require liberal but judicious feeding. Avoid the risk of allowing cows to go into marshy grounds, where they may be mired. The early grass which tempts them into these places, is no compensation for the danger they incur.

MARES.

Mares should be bred early. They are more likely to prove in foal than at a later period when at grass. It is better, too, that colts should be brought early in the season, as if they come when the mares are at grass, they are liable to the fatal affection called the "scours."

"Black Hawks are the best roadsters," says an exchange, and offers this evidence to sustain the assertion: "At the Agricultural Fair at St. Louis, Mo., last fall, $1000 was offered as a premium for the best roadster stallion. The judges, from the great number offered, selected six which were deemed the best, and then made a critical examination of them to find the best *one*. Of these six, five were sons of Black Hawk, and the sixth a grandson. 'Stockbridge Chief,' bred in Massachusetts, and now owned in Ohio, won the premium."

WORK IN THE GARDEN.

APRIL.

In this department there is little to be added to our hints of February and March. Be sure that such matters as were suggested last month and not attended to, be looked after immediately. Lay a good foundation for the year's success in a thorough preparation by digging and manuring. If you have no good composts on hand for garden crops, begin at once to husband materials for future use.

PEAS.

Put in early peas at once, and at intervals of two weeks for a succession.

POTATOES.

Get these in very early, on light ground not too heavily manured. Good old compost in the drill with the sets is best for them.

CABBAGE.

Sow seeds for late planting thickly on well prepared ground. Level the ridges on which Early Yorks stand.

STRING BEANS.

Plant these early.

SEEDS, &C.

Sow seeds of Lettuce, Radish, Carrots, Beets Parsnips, Tomato, Egg Plant and Celery. Set out Beets, Carrots, Cabbage, &c. for seeds.

CORN.

Plant early Corn, and continue every two weeks for a succession.

LIMA BEANS.

Plant these late this month in warm soil. Prepare poles in time, of sufficient length to stand six feet above ground when firmly planted to the depth of 1½ feet. Do not fail to ensure a good supply.

SWEET POTATOES.

Get plantings of these and bed them without delay. It is a very desirable crop to have in abundance.

MELONS.

The crops of watermelon and canteloupe should not be overlooked. Good rich compost in abundance is essential; plant by the middle of this month. Both delight in a warm quick soil; it is essential to the watermelon.

STRAWBERRY BEDS.

New beds may be planted out, digging and manuring abundantly first. Top-dress old beds, picking out all bunches of grass, but without disturbing the soil unnecessarily. A mulching of straw is very useful.

ASPARAGUS.

Dress Asparagus beds as heretofore directed, and sow seeds.

THE FRUIT GARDEN.

Finish without delay the planting of Fruit Trees, if not already done. There is always risk of loss when the leaves begin to put forth.—Water occasionally in dry weather, and before the hot weather sets in, a mulching of straw or any sort of coarse litter will prove a great preservative. You may still plant, too, Raspberries, Currants, Gooseberries, Blackberries, &c. Grafting of various kinds of fruit trees may be performed this month. Plough or dig deeply the earth among your grape vines, if not already done, and keep the surface always loose, clean, and free from weeds.

Cashmere Goats.

An importation of these valuable animals has been made by the Hon. W. H. Stiles, and after a tedious voyage has arrived safely at his place up the river, having been accompanied by a Greek, who is still with them as an attendant, all the way from Smyrna. This is the second importation of the pure breed of Cashmere goats ever made into this country; the first having been made by Mr. Davis, who sold them to Mr. Richard Peters, of Atlanta, from which importation all the crosses and half breeds in this country have sprung. Mr. Stiles has eight of them, and they are no less curious than valuable, something of the size and shape of our native breed. They differ widely in their hair, which grows so luxuriously as to give them the appearance of a sheep with an immense fleece on it. The experiment having been thoroughly tried as to their thriving in our climate, and resulting satisfactorily, there can be no doubt of the value they will be to our country. The uses to which the hair is put are numerous. Camlet and worsted goods and ladies' fabrics, as challies, mouslin delaines, gentlemen's clothing for summer wear, hosiery, &c., promising a beauty, strength, durability, lustre and permanency of color, far superior to the wool of the sheep or the alpaca.

These goats are found in the Himalaya mountains, and have to be brought about a thousand miles before they reach a shipping port. They are not sheared like the sheep, but the fleece is pulled off twice every year. An ordinary fleece weighs between three and four pounds. The N. York price, $8.50 per pound, making at least $51 a year for each goat, while there is no cost in feeding them, for they are as frugal and hearty as the common goat.

Their great value in this country is the splendid cross with our common goat, the half breed being nearly as valuable every way as the full breed, and their remarkable fecundity soon repays a very heavy interest on the investment, while the expense of keeping them is a mere trifle, as they live on briars and foliage not touched by other animals. There is a great demand for them, and the prices they bring are fabulous—one buck sold as high as $1,500, and one of Mr. Peters' stock was sent to the Illinois State Fair for exhibition, and so pleased the President, that he offered the weight of the animal in silver in exchange for him.—*Savannah Republican.*

The Peach Blow Potato.

To the Editor of the American Farmer:

In the February number of your valuable paper I have seen a remark relative to the quality of the Peach Blow Potato being overrated. My experience teaches me to believe different. Having stopped early last spring at the U. S. Hotel, New York, I was struck with the fine flavor of the potatoes which came on the table. I enquired of the proprietor, Mr. Carroll, what kind of potatoes they were; he told me they were the Peach Blows, of which he had bought 400 bushels, at a cost of $1.25 per bushel. On my return to Baltimore, I looked everywhere for them, and at length had some offered to me on Pratt street, near the wharf, as the genuine Peach Blow, but none looked to me like those I saw in N. York. I took a few home with me, had them cooked, and found them of a different color and entirely different flavor from those I saw and ate in New York, and I concluded that none of them were genuine; so I ordered some from Mr. J. G. McMurray, of Lansingburgh, a few miles above Troy, N. Y., for which I paid $1.25 per bushel, besides the freight to Baltimore. According to Mr. McMurray's directions, I plowed deep furrows, to lay the sets in, in order to have sufficient soil to throw over them afterwards, as they produce so abundantly. I followed his directions, and the result was, that I raised 700 bushels on five acres of new land, planted with corn the year before. I allowed Dr. Councilman a few last spring for seeding, and he pronounced the result the same. I also sent my son-in-law, Mr. J. B. Van Court, (near Ofallon, Illinois,) a few last spring, and I have now from his neighbors orders for 12 barrels of seed potatoes, at $1.50 per bushel. I have also orders from this immediate neighbourhood as well as from gentlemen on the Frederick road, and near Elkridge Landing, who ate of them and who intend to plant them for family use. I have sold them to private families in Baltimore by 10 and even 40 bushels at a time, and all who tried them preferred them to the mercer. Of the latter, I planted some in the same field, and did not raise over 50 bushels to the acre, and was offered 75 cents per bushel, when I got $1 for every bushel of the Peach Blows. When my team goes into Baltimore, I will send you some to try, and I have no doubt you will form a different opinion about the Peach Blows. They keep very firm until new potatoes make their appearance and are entirely free of rot.

I saw also that you take great interest in the culture of the grape. I commenced planting grape vines three years ago, and have now two acres in a fine thrifty condition. Some of the vines bore very abundantly last summer, and I have made some wine, of whose quality I will give you information hereafter. Should any person wish to embark in that business, I will take great pleasure in giving all information, by giving me a call at my place. The vines are mostly Catawba and a few Isabella. I shall have some cuttings for sale this spring.

Very respectfully, your ob't serv't,

G. H. MITTNACHT,
Near Pikesville.

We have found these potatoes on trial very fine—quite equal to Mr. M.'s description.—Ed.

[For the American Farmer.]

Circulation of the Sap in Trees.

In a late number of the *American Farmer* is an article credited to the "Scientific Artisan" on "the circulation of the sap in trees." The writer of this article, it seems to me, has not applied the true principles of philosophy to his theory in all cases, at least he has somewhat contradicted himself. He says: "to many who suppose they understand perfectly the circulation of the blood in animals, the circulation of the sap in vegetables is a great mystery. If a heart could be discovered in the trunk of a tree, the mystery would vanish—mechanical force and suction would explain the matter as well in trees as man; but trees have no hearts except heart wood, and hence people are driven to account in some other way for the motion of their juices. * * * Science has decided that the heart of animals has much less to do with the circulation of the blood than in times past it received credit for; and in respect of his circulation, man is found to be on a level with the grape vine and maple." Does this writer mean to say that the heart has nothing to do with the circulation of the blood in man? We know that it has nothing to do with the circulation of the sap in the "grape vine and maple." This would seem to be his opinion, for further on he says, after describing the circulation of the sap in trees, "that the circulation of the blood in animals admits of an analagous explanation." Now there is one little fact that sets all such theory aside, however dignified with the name of "science," and that is, we all know that when an artery is severed, the blood flows in jets precisely as the heart pulsates, proving beyond a doubt to *common sense*, that the muscular force of the heart is the cause of this unequal flow.

"Mere capillary attraction," he says, "will not account for a flow of fluids; it is only sufficient to account for a limited rise. If a bundle of small tubes be inserted in water, the liquid will continue to rise in the tubes until the attraction of their walls for the water is balanced by the tendency of the water to seek the lowest level, and there it will remain stationary." He admits, however, that, "if a cotton wick is placed upright in alcohol, the fluid will rise and fill the interstices of the wick upon the same principle;" and he also allows that if "a flame be applied to the extremity of the wick," or if the "extremity of the wick is spread out so as to expose a large surface to evaporation, as fast as the alcohol is removed by these means at the extremity, fresh portions will come forward to take its place. A flow will thus be established, and the vessel will ultimately be emptied of its contents. The flame in one case, and evaporation in the other, being the cause of the flow—the capillary tubes being only the medium." Here is his mistake—the capillary tubes have not an attraction strong enough to force the fluid above their extremities, but if the fluid is removed from their extremities by any means, it continues to rise that far. The flame is not the force that draws the liquid up, it is the capillary attraction that causes the flow, hence the capillary tubes are more than the "medium."

What stronger argument would the advocate of the power of "capillary attraction" want, to account for the circulation of the sap in trees? If, as is asserted, the removal of the alcohol at the end of the wick (either by the flame or by its being spread out so as to allow of a rapid evaporation) will cause a rise of the fluid to supply its place, what more do we need? This is precisely what is done by the evaporation of the water from the surface of the leaves of plants. Some philosophers have asserted that the office of the leaves of plants is principally perspiratory, and that the time is coming in which that will generally be admitted.

The writer, in appealing to "recognized principles of physics and chemistry for a solution of the question," brings forward the known fact of two fluids of different density being placed in contact with each other, mixing together, as well as their mixing when separated by some porous membrane, and the tendency of the less dense fluid to flow more rapidly towards the denser fluid. This principle is considered as illustrating the facility by which the water in the soil is imbibed by the roots, the sap within them being more dense by accumulated matters for growth than the water itself. But in bringing forward his illustrations of "100 grains of dried ox bladder by being immersed for 24 hours in pure water, absorbing 268 times its own volume of that fluid, and of the same weight of bladder being immersed for the same time in a solution of saturated sea salt, taking up only 138 times its volume—and the same weight of bladder in the same time only taking up 38 times its own volume of alcohol," he has overlooked some important facts in the case that makes his reasoning unsound. Pure water we know (by its power of capillary attraction) will penetrate all porous substances. There seems to be hardly a limit to this power—it is made to split the hardest of rocks. The tendency is to expand substances, fill all their pores, and, in many cases, to finally separate matters. This takes place in animal fibre, as in ox bladder, but when animal fibre is subjected to "a saturated solution of sea salt," the tendency is to subtract all the water and then to contract the pores of the fibre. This is the effect of salting meat—while the salt remains in it, the flesh cannot be made to imbibe as much water as was in it when fresh. So, too, of alcohol; it preserves flesh more completely than even salt water and changes it less—witness the fact of animal specimens being preserved in alcohol so frequently and so completely. So these facts are what we might rationally conclude they would be, but upon different principles as accounted for by the writer. It is not "the greater attraction of the membrane for the water than for the brine or syrup," but the attraction of the water for the membrane, it being passive, while the water is active.

In a note the writer says, "it is not intended to be taught that the sap circulates in continuous tubes; it is well known the sap circulates in and through closed cells; this expression is used merely as approximating to the truth." There are some facts, however, that would seem to shew that these cells cannot, in all cases, be so closed as to circulate only by endosmosis, as termed by botanists. Witness the rapid flow of sap from the sugar maple merely by the insertion of a half inch hole for half an inch into the wood of the tree. See how rapid the sap will flow when an

axe is inserted into the wood of the birch, and many other kinds of timber. Look how quickly the sap flows from the grape vine, when the vine is cut at a certain season; the rapidity of its flow would seem that the water has but little obstruction in passing along the stem; certainly but few "closed cells" can be there. Behold how easily quicksilver penetrates through wood, when one end of it is covered with that metal and the other has the pressure of the atmosphere taken off it. Could that pass through closed cells? It looks extremely doubtful.

The writer considers that "the constant and uniform difference of composition between the sap and the water of the soil" is the cause of the flow of the water of the soil into the "spongioles of the roots" by "capillary attraction." The leaves "are continually evaporating the excess of water absorbed by the roots; the carbonic acid is there decomposed, parting with its oxygen—the ammonia is decomposed, parting with its hydrogen—and carbon and nitrogen become united with the elements of water, forming dextrine, sugar, albumen, &c. For these organic principles the tissues of the plant have a special affinity, and hence they are continually abstracting them from the elaborated sap, and assimilating them as woody fibre, starch, and other products." And thus considers "the ultimate approachable force which determines the flow of the sap" to be the "chemical or electrical attraction" that "the tissues of the plant have for these organic principles," and that when a point in the plant "appropriates some of" these principles, "its composition is then changed; the attraction hitherto existing between the two ceases; a fresh portion is attracted to the same point, and the changed portion moves on, and this continues as long as the exciting agencies of light and warmth continue in action." "The circulation of the sap is due, therefore, primarily and mainly, to *chemical attraction and decomposition*, excited by the light and heat of the sun's rays—the mechanism whereby it is maintained, is the membranous and cellular structure of the roots, stems and leaves of the plant; and evaporation does no more than aid the chemical force in the work."

There is one difficulty, however, that all must encounter who maintain, as this writer does, that the matters carried up by the sap have to go to the leaves and be there decomposed before it can be assimilated by the plant, or, in other words, before it becomes "elaborated sap." How does the "carbon and nitrogen" return to the lower part of the plant, to build up its structure? I know that many writers maintain that there is a downward flow of sap, and this writer must have some such contrivance to carry out his theory, though he does not say so in so many words. But I ask, in sincerity, where is the evidence of such flow? "Chemical attraction" could not account for an upward flow, if the matters had to be conveyed to the leaves before they could be assimilated; the force then would be only a downward force. The downward flow, as advocated, is considered as descending between the bark and the wood, where most of the new wood is deposited, but all the growth is not deposited there. We all know that the new sap wood is much more porous than the heart wood, and that its pores become gradually filled up with woody matter. How does this matter get there? Here is a difficulty that the theory of a downward flow of sap fails to solve.

There is another difficulty that this writer's theory encounters. "Chemical attraction and decomposition" cannot account for the force necessary to expand the bark of trees in growing. It often happens that oaks and other trees with hard and rigid bark increase an inch in diameter in a year—this makes the circumference three inches larger, and the bark has to be forced open this width. Where is the power that can do this? It cannot reside in "chemical attraction and decomposition." This writer rejects capillary attraction, except to get the water of the soil into the spongioles of the roots. Stephens, in his interesting work on Central America, mentions the fact of trees growing out of walls, doubtless from their seeds becoming deposited in the seams of the stones, and by their force in growing breaking stones and throwing down walls.

There is but little doubt that "electrical attraction" has more to do in vegetable growth than has hitherto been attributed to it. The varying electrical states of the earth and the air are often so considerable as to be plainly visible where apparatus has been erected to test it. Wires have been erected in open spaces and extended beneath growing plants, causing a very perceptible increase of growth. This increase was not by the addition of new matter, for electricity contained none, but by exciting the matters then present to greater activity. Trees and vegetables are in precisely the position to be the conductors of electricity from the earth to the air and vice versa, and that part containing the most water would be most attracted by it.

A more rational theory of "the circulation of the sap in trees," and one that corresponds more nearly to the simplicity of nature's laws, as we understand them, would be, to allow capillary attraction to be the principal cause of the imbibition and circulation of the sap; to admit electricity and light to be the decomposing agents, thus decomposing matters in their passage in the sap, precisely where needed for growth; to suppose the office of the leaves to be chiefly perspiratory, as has already been asserted by some philosophers, giving off water and oxygen gas. Capillary attraction is known to be able to split the hardest rocks and to exert a power at least equal to what would seem to be required to force the sap to the summit of our tallest trees. Electricity is well known to be able to release oxygen from its compounds. Chemistry itself teaches us this. Some learned men have asserted that it is too feeble an agent to answer such purpose, but when we have such manifestation of its powers as was exhibited in the late beautiful aurora borealis, and the derangement it caused all over the country to the telegraphic wires, and its manifestation in thunder-storms, can we conclude that it is not potent enough for such a purpose. Even a heavy driving fog has been known to exhibit electrical action nearly as strong as a thunder-shower, where a proper apparatus was prepared to test it—yet it would not be observed without. And no doubt, could we but see the movements of that subtle fluid along our lightning rods erected to protect buildings, we should see more manifestation of it than we suppose at present.

YARDLEY TAYLOR.

Loudon county, Virginia.

State Chemist's Report—Fertilizers—Preparation of Bones, &c.

CASTLE BLAYNEY FARM, NEAR BEL-AIR,
February 24th, 1860.

To the Editor of the American Farmer:

Among the "Pub. Docs" (as you editors say) which I have received, is the *first* report of P. T. Tyson, Esq., our State Chemist, which I have read with much satisfaction, and I am more than ever persuaded that if our practical farmers would put to practice the theories laid down in that report—(and when they do so, let them, in turn, report to your excellent journal their results, GOOD or BAD)—they would not only encourage our *good* old "mother earth" to extend still more of her favors to us, for the attention bestowed on her, (for when did she ever fail to do so TEN FOLD whenever she has been properly addressed,) but it would excite our farming community, *generally*, to use more energy and enterprise in our avocation, and thereby show other professions that we are *fully equal* to them in all that adorns our civilization and our dignity and greatness as a nation, and not only that, but to show them also that their standing and prosperity depends upon the progress and the success of AGRICULTURE, which is the rock upon which every other interest is based, from your merchant princes down to your artist boot-black. Though, so far as the nonsense about your modern merchant princes goes, I contend the humblest of our clod-hoppers—"the man who causes" (as said Sir John Sinclair and others before him) "*two* blades of grass to grow where only *one* grew before"—is of more consequence to mankind than the whole race of politicians and lordly princes put together. Now, sir, in view of the good opinion we farmers so justly entertain of ourselves and our profession, what has been done by means of legislation and money for our interest? That interest affording not only the bread but in fact the occupation for all others? It has always been a wonder to the writer, why all other professions, from the *highest* to the *lowest*, in order to augment their own, did not contribute more towards building up that upon which their own success mainly depended. And now, sir, permit me to urge it upon all farmers to make it a point whenever they are called on by candidates for Congress or our State legislatures, to put the question to them, "what do you propose to do for agriculture, if elected?" And never, as a general thing, permit them to pass by our own peculiar interest when they mount the stump to amuse us with what is called, in our rural districts, "corn-field talk;" and then, when elected, see to it that they do not forget to act *corn-field interest*. I must acknowledge that our own Legislature, within a few years past, have acted more liberally than in times past towards the farming interest. But only reflect how little that interest got for half a century previous, compared with other things of minor importance.

I wish to refer to one or two points in the report of our State Chemist. The first, as to the various modes of applying Bones. About 1849 or '50, I began to dissolve bones, which were gathered by my servants, for which I paid them 25 cents per 100 pounds. They got them about the farm and from marshes, where cattle had nipped their *last bite*, for a time beyond the memory of this generation, and of shop keepers in the county. I had them mashed with a heavy sledge hammer as well as it could be done with such an instrument. I then got some half dozen oil casks and sawed them in two pieces, into which I put 150 pounds bones and half that weight of vitriol, of ordinary strength, in carboys of 150 pounds each; added water to cover the bones, (of course not to weaken too much;) kept a stick in each cask and had it stirred once to three times a week for several weeks, according to the heat of the weather, and so soon as the bones began to show the white, lime-like incrustation on them, the contents of a cask was put into a large iron boiler, with a slow fire, until the bones were soft enough to mix into compost, which was done by scraping up any convenient earth near by in a heap like that when lime is made into mortar; then add a bushel of plaster; manipulate the whole well; throw it into a cart and put it on an acre of tobacco, corn, &c.

The other point I intended to refer to is the necessity of some plan to be adopted whereby the *true*, *good* and *honest* fertilizers may be bought and used to advantage, and the spurious sorts exposed and condemned. All, *good* and *bad*, are too high. Why should we pay $10 per ton for mixing guano and 25 per cent. profit on worthless manures, while the manipulators risk not a *copper*, and get rich at our expense? On one occasion (among others) I paid $65 for an article that, had I known its true character, I would not have hauled it from the railroad depot: and on another, I paid $96 for an equally worthless article, thousands of dollars' worth of which is now still sold in Baltimore, yearly, to careless farmers; and on still another occasion I had engaged 600 bushels of bones, to be delivered in instalments of 200 bushels, (as I could haul them) —when I happened to both measure and weigh the *first* instalment, and found they lost 20 per cent. in measurement and weight. Well, sir, do not *hundreds* of our planters and farmers buy, receive and apply bones and other manures without ever, in fact, knowing whether or not they ever get what they pay high rates for. We want a rigid inspection of all fertilizers sold in the State, as chemists are not always to be relied on, even when they are *honest* and skilful. Proper attention as to measurement and weight alone, demands and would well pay the cost of the salary of such an officer, to say nothing about the other thousand and one impositions we are subjected to in trying to procure a *substitute* for the too dear Peruvian Guano. Were it not for that, we should not permit ourselves to be cheated so often as we are by the miserable *nostrums* offered to a naturally too confiding community, desirous of encouraging enterprise and industry among themselves and others, even at the risk of being grossly imposed upon. Another reason why we are so often duped, is, that some few of said fertilizers are really *good*, yet still too high, though I would assure my brother farmers that most of them are very *dubious*, and had better be entirely abandoned until we get an honest inspection of them, or unless the vender will permit them to be tried, and then paid for *only* if worth the cost, in the judgment of any honest

neighbor of the farmer who may try them, and if they prove worthless we shall only lose the increased crop, which is enough for any farmer to lose, rich or poor. Yours, &c.

ED. REYNOLDS.

P. S.—After trying all the different modes of applying bones (except fermentation) and carefully reading the article of our State Chemist on the subject, I have come to the conclusion that, of all modes, the best is to harrow them in *lightly*, and let them be such as are called neither very fine nor coarse. Indeed I have sowed them after early-sown wheat is out of the ground, on the "surface," where the warm autumn sun will operate on them to advantage, or where wheat is put after corn that has been well tilled, sow them after the corn is laid by latter end of July.—Every day's experience is convincing me more and more of the propriety of TOP DRESSING or surface manuring. E. R.

Selecting Calves For Rearing.

Use judgment in selecting such heifer calves as are to be reared. Select only those whose mothers are good milkers, and whose sires have come from good milking stock; at the same time, the calf itself should have those characteristics that indicate an aptitude to develope good milking qualities, viz: small, fine head, rather long in the muzzle, bright eyes, thin, tapering neck, small, well-shaped legs, long body, large hind-quarters, set wide behind, soft skin, fine hair—the color of which is immaterial—and above all, the milk mirror, or udder veins, should be large and well developed.

The raising of bull calves for breeders had better be left to those who have time and means to devote their attention to it, and procure the best animals to begin with. It would be no loss to the country were the numerous specimens of scrub bulls, too often seen, condemned to perpetual exile.

But there is no reason why a portion of the male calves, at least, should not be reared as bullocks, either for the team or the butcher; and it is important that such as are reserved for this purpose, should possess certain points indicative of future excellence, viz: well-shaped head, small ears, short, thick neck, deep brisket, broad chest and shoulders, fine bone, long body, well rounded behind the shoulders, straight back, wide loins, full quarters, tail thin and tapering, skin soft and not too thin.

It is too often the case, that animals are selected for rearing from their being of pretty color, that takes the fancy of some member of the family; or the calf of some pet cow of the dairy-maid—without attention being paid to its defects or excellencies. Not unfrequently, valuable calves are fattened for veal, simply because their color is uppleasing to the eye.—*Ex.*

A Yankee in Boston has set up a one-horse *thrashing* machine, for the convenience of parents and guardians having unruly boys. He'll lick an urchin like thunder for fourpence. Small lickings done for two cents only, and the most entire satisfaction warranted.

[For the American Farmer.]

Clover and Wheat.

MR. EDITOR: The well filled columns of the March number of the *Farmer* are before me—in which I find communications from many of your correspondents which exhibit *prima facie* evidence that they do not live for themselves alone. The article from the pen of Mr. Goldsborough shows not only that a very large crop of wheat has been raised in Talbot county, but tells us how it was done, without demanding a fee for the patent. This article alone is worth *much* more than the cost of the number.

I also find an article from the pen editorial, in which are some comments on an essay written by your humble servant, which you have thought contained sufficient merit to induce you to make liberal extracts for the columns of the *Farmer*. I would ask leave to make a few remarks, by way of explanation, relative to your comments; not that I design to open a controversy on the subject, for it would be the height of folly for one in my humble sphere to attempt to measure pens, on a scientific subject, with a gentleman whose opportunities have been so eminently superior.

Enough, by way of introduction. I find that you agree with me perfectly in the most important points in the essay, that is: "that green unmatured crops should by no means be turned under for the purpose of fertilizing the soil." If this point can be satisfactorily established in practice, it is more important than all other points in the essay, for it is somewhat opposed to the teachings of Professor Johnson and other men of science; but even they admit that scientific theories are worth nothing if not sustained by practical tests. I agree with you, when you say that the longer the crop is kept upon the surface and not turned under at all, the greater the fertilizing effect; not that I believe that the plants themselves increase in fertility after arriving at maturity, for they can, perhaps, never be in better condition (if, from necessity, the ground require to be broken that year,) than when just ripe enough for the seed to vegetate—but for a crop, such as corn, it would certainly be better to remain upon the surface until the following spring, by which the vegetable matter will afford protection to the surface, and the roots may, for all that we know to the contrary, perform the office of conveying ammonia from rain and snow water through their tubes into the soil, and there store it for the following crop. This, I admit, is a theory for which I have no authority, but practice demonstrates that land improves while it remains in grass, even though a portion may be mowed or fed off.

In regard to some other points in my essay, to which you take exception, I would say a word or two. You object to turning under the first year's growth of clover. You say, truly, that its first year is but the beginning of its growth, and that it would be preferable to wait until the second year. In this we perfectly agree, though perhaps not so expressed in the article. The proposition to clover the corn stubble and plough under the same year, was in contradistinction to a course pursued in this State where oats are sowed on the corn stubble and the naked oat

stubble turned for wheat. While I admit that the second year's growth of clover would be a far preferable course of rotation, when a farm contained six or at least five fields, I still maintain that when the farm requires the corn stubble for wheat fallow, it would be better to have even a slight growth of clover in preference to a naked oat stubble. As to weeds, I think there will be but little difficulty, if the ground is broken in spring with the plough, or even the cultivator. Breaking the surface in the spring changes the character of natural growth, as may be seen in any badly broken corn stubble oat-field; it may be seen on such, where the furrow did not lap in the middle of the ridge or breadth, that tall feathery weeds will spring up and grow to the height of five or six feet, while none are seen when the ground has been well broken.

Again, you remark that, "it is almost universally considered desirable, by experienced wheat growers, to have the fallow completed a month or more in advance of seed time." In reply to this, I would say that, although it may be desirable, yet it is, in my opinion, not really essential in the course proposed, for the land has already passed through an ameliorating or rather a refining process during the culture of the corn crop. The vegetable matter which had accumulated previous to the corn crop is now decomposed, and the slight coat of vegetable matter acquired during a single summer, would not necessarily require to be ploughed so early. This, however, is a mere matter of opinion, of which I am by no means tenacious. As to clover sickness, this is something of which I am unacquainted. I have been sowing the same field in clover every third, or fourth year, at farthest, for near twenty years, and I have never had better crops than the last few years, and never failed to get a good set since my land has been sufficiently improved to bear it, except in such years as were universal failures in consequence of extreme heat and drought. Clover will not live and thrive on land that is destitute of lime and potash, at least this has been my experience.

The discussion of questions sometimes induces practical experiments, which demonstrate facts of great value to the public. Hoping this article may not prove entirely useless, I remain most respectfully and truly your friend,

March 1st, 1860. T. B. C.

The only point in which there seems to be a material difference of opinion between Mr. Coursy and ourselves, is with reference to the seeding of clover in spring upon corn stubble for the purpose of fallowing for wheat the coming fall.—This is strictly a practical question, on which practical men will differ, and on which we receive the opinion of Mr. Coursy with entire respect. We suggest, however, that ploughing in spring for the reception of the clover seed, adds materially, in our opinion, to the difficulty of having it adopted. This difficulty is simply that farmers will not do it. The advantage of the course must be much more palpable to induce the large cost of an extra ploughing in addition to cost of clover seed and the risk of failure to get a "set." We suggest to our friend, however, that it is just here that *pea fallow* may come in with great advantage over the clover. It requires, of course, this spring ploughing, and will cost something more in seed, but in bulk of growth and in actual value, will exceed any growth of clover, from spring to fall, full one hundred *per cent.* and entirely subdue all weeds.

Changing Pasture—Shade for Stock.

We take the following notes of a discussion of the propriety and advantage of change of pasture for stock, from the *Country Gentleman* of January 12. We should be glad to hear from some of our Virginia or Maryland graziers on these points. Mr. R. H. Dulany, of Loudon county, Va., has a blue grass pasture field of a hundred acres which has not been broken for many years. It has been a very common opinion among the inexperienced that there is much economy of pasturage in a division of the pasture ground as well as advantage to the stock in an occasional change. Will not some of our friends agitate these points somewhat through the pages of the *Farmer*:

In regard to changing pastures of dairy cows, we recently copied (*Co. Gent.*, Oct. 20, '59,) the opinions of two extensive New York dairymen, "that cows are more contented, and do better through the season, when not changed from one field to another, unless from a day to a night pasture," or, in other words, that they do best to range at will during the day over the whole pasturage of the farm. Although we have seen other opinions and remarks on the subject since, (some of which we condense below,) we see no reason for modifying the opinion then expressed, that, "with a fully sufficient range this may be good policy, but we believe the grass will be more economically consumed, when occasional change of pasture is made." It may, too, be true of some variety of grass, and not of all. Clover, we are sure, and we think it is so with timothy, cannot be employed advantageously as pasture with constant feeding.

We find in the *Ohio Farmer* some report of a discussion by the members of the Ohio State Ag. Society, at their recent annual meeting, on this and cognate subjects. A large majority of the graziers present thought that stock should not be changed from one pasture to another; that if a farmer has one hundred acres of pasture, the division fences should be thrown down. Mr. Seymour, of Ross, said cattle would fatten better confined to one pasture. J. M. Trimble, of Highland, preferred one pasture, without change.—Col. Spencer, of Geauga, said that for *cheese* there should be no change. It always diminishes the curd. Mr. Palmer, of the same county, thought a large range best. W. H. Ladd, of Jefferson, pastures all his stock in one field. Mr. Jones, of Delaware, said that in *a blue grass pas-*

ture, a large range is best, but doubted about this in clover or timothy.

For increasing the milk, Mr. Trimble thought changing pastures an advantage. Col. Messenger, of Marion, said frequent changes are best for milk, but would have no change for making beef. Col. Alsdorff, of Licking, a grazier, keeping from forty to fifty head of cattle to feed, said part of his pastures were blue grass, and part of timothy and clover. He fed off the blue grass first in the spring, and then put his cattle on the timothy and clover when the latter begins to shoot. He sold his fat cattle in June and saved his blue grass for fall pasture.

The question of shade trees in pastures (first started by Hon. A. B. Dickinson, Steuben Co., N. York,) was also discussed. Col. Kenrick, of Franklin, regarded shade trees in a pasture as a nuisance—the cattle would lie under them until drawn out by hunger. Mr. Seymour concurred in this view, and added that cattle grazed in the sun make better and more solid fat, which weighs more, and stands driving better. Flies annoy cattle more in the shade than in the sun. Messrs. Trimble and Messenger would have no shade trees in cattle pastures. All thought them necessary for sheep. On the other hand, Mr. Palmer, of Geauga, and Col. Alsdorff, looked on shade as a benefit. Mr. Taggert, of Wayne, though admitting that more beef could be made in the sun than with shade, would favor trees as more humane to animals. Thirteen head of cattle died by sunstroke in his vicinity last summer. Dr. Townshend said he believed in shade. The instincts of animals may be trusted, and should be supplied. Exercise diminishes the amount of butter, but increases the amount of cheese.

Some other matters brought out, we shall report at another time. We shall be pleased to give the views of our readers on the above topics —and especially upon the best method of feeding off clover and timothy, where these are mainly depended upon for pasturage, as in our grain-growing sections.

Sassafras—To Eradicate.

Geo. L. Washington, Esq., of Jefferson county, Va., while forwarding his subscription to the *Farmer*, is good enough to give us the following:

In one of the back numbers of the *Farmer* an inquiry is made, by some one, as to getting rid of *Sassafras*. I copy, from my "omnium gatherum" or receipt-book, a piece on the subject, taken from the *Southern Planter* several years ago, which is at your service:

"SASSAFRAS—TO ERADICATE.—From ten years' experience, I find that a handful of salt thrown at the root of each bush, or, if they stand very thick, a pretty heavy broadcast of salt, applied during the month of May and in a field that is to be pastured that season, will most effectually eradicate it.

One of the fields, on the farm I now occupy, was greatly infested with them and is now so entirely clear as to be difficult to get enough for a cup of tea. P. D. VENABLE.

Wheatfield, April 5, 1854."

Preparation of Bones for Use.

We have frequent inquiries from correspondents who wish to be informed as to the best method of preparing bones for use. The reduction of whole bones without machinery is a very tedious and difficult process, and for ordinary purposes will not pay the cost. When they can be had in the condition in which we find them in the market as ground bones, our own opinion is that, generally, it is better to use them without the trouble and expense of preparation with acid or otherwise. Though not so prompt in their action, they are more permanent, and we will not fail in time to get the full use of them. In the report to the Legislature, of Mr. Tyson, the State Chemist, he treats of two methods of preparing bones, by the use of acid and by fermentation, and gives a preference to the latter. He gives the two modes of preparation, as follows:

In the Patent Office Report of 1856, Mr. Brown recommended the use of five pounds of sulphuric acid to 100 lbs. of bones, and to compost them with muck.

An article in the *Country Gentleman* of the 28th October, 1858, by Prof. Gilman, of the Virginia Military Institute, refers to an article of Prof. Norton, which recommends 50 or 60 lbs. for whole bones and 25 to 45 lbs. for ground bones, and adds that he (Prof. Gilman) found even 100 lbs. of acid were not sufficient to dissolve 100 lbs. of bones.

The real state of the case is, that if it be desired to dissolve all the phosphates in 100 lbs. of bones, or about two bushels, we must apply 59 lbs. of sulphuric acid, whose specific gravity is 1.85, diluted with three times its weight of water. And to effect a complete solution they must be frequently stirred during three or four weeks. If the bones be whole it will require many months to dissolve all their phosphates.

If it be desired to dissolve a part only, a less proportion of acid may be used. My own opinion is, the less, the more economical to the farmer in the long run.

We must not omit to count the cost of applying sulphuric acid to bones, which, of course, will be modified by the proportions used.

Let us first ascertain the cost of effecting a complete solution of the phosphate of lime in bones:

1st.	100 lbs. of ground bones, costing	$1.46
	59 " sulphuric acid, (3 cents)	1.77
	We should add for labor and the cost of a vat or tub, which is soon destroyed, freight on acid, &c.	.08
		$3.31

2d. If we used acid sufficient to dissolve half the bones, the cost will be as follows:

100 lbs. bone	$1.46
30 " sulphuric acid, (3 cents)	.90
Labor, &c., as before	.08
	$2.44

As a bushel of bones will average in weight 45 lbs., we have to deduct 55 per cent. to get at the cost of one bushel; therefore,

One bushel fully dissolved will cost.....$1.49
One bushel half dissolved will cost..... 1.10

It will be seen, therefore, that by dissolving we much more than double their cost, and if but half dissolved their cost is increased more than two-thirds in amount.

It is true that a smaller quantity will suffice for an immediate effect, which may suit a temporary tenant, but let the land-owner bear in mind that the *whole ultimate benefit* is in proportion to the *weight of bones* applied. It is true the action of the acid upon the carbonate of lime produces a portion of gypsum, but so far as that article is concerned, we can purchase it at less than one-fifth the cost of making it.

When bones or phosphatic guanoes are dissolved in acid it is usual to add absorbent materials, so that it may be made sufficiently dry to admit of being spread. Neither lime nor ashes should be used for this purpose, because it would precipitate the phosphate and neutralize the effect of the sulphuric acid.

Great care should be taken when the acid is poured into the water, which must be done before the bones are added. It must be done very gradually, because it generates heat above the boiling point, and is apt to be thrown in the faces and on the clothes of the workmen.

Sir J. Murray thinks there is much loss by the soluble phosphates being carried off by water; but there is good reason to believe that the cause of their effects being so slight after one or two crops, is more owing to certain known chemical reactions in the soil. Soluble salts of alumina and iron, especially the latter, are never absent from soils, and when a soluble phosphate of lime comes in contact with either of these, the phosphoric acid is precipitated as phosphate of iron or alumina. Both of these, according to Bischoff, are among the most insoluble substances known in water and carbonic acid. But some experiments of Dr. Piggot prove that they are soluble in alcaline silicates.

Whilst it does not seem proper to apply sulphuric acid to bones, yet I think it probable that we may advantageously use either that or muriatic acid in *small* proportion to some of the phosphatic guanoes, especially to those containing phosphates of iron and alumina.

It remains now to notice the third mode of preparing bones, which consists in putrefaction and decay.

This mode has been evidently coming more into use within a few years past, and we often find directions in the agricultural journals for effecting it, most generally by making them into composts with stable manure or other matter. I have, however, met with nothing in that way that appears likely to answer a better purpose than that practiced by me nineteen years ago, after experimenting to some extent. And as inquiries have been made, in answer to which I had found it necessary frequently to describe the process, it will now be repeated in full.

Having smoothed over the surface of the ground —under a shed, if convenient—place thereon evenly, a layer of three inches of ground bones, and then an even layer of good fine soil or earth, free from stones or sticks. Give a good sprinkling of gypsum over each layer of earth. Another layer of bones is applied upon the layer of earth, and the same alternations are to be repeated with the gypsum until we have four of each, bones and earth, and the height of the pile will be 24 inches. As the bones are usually dry, each layer should be well moistened with water, or *better with urine*, in order to hasten the process. It is proper to place two or more sticks in the pile reaching to its base, which should be frequently examined by feeling them, in order to judge of the degree of heat produced. If the weather be warm, they will begin to heat in a few days, and in a week or too will become hot. When, upon taking out the sticks, they feel unpleasantly hot, the process should be checked by chopping or spading down the mass from top to bottom, which, if carefully done, mixes the materials well together, and they are ready for spreading.

If the process be commenced during cold weather, it may be hastened by placing at the bottom a layer of fresh horse dung about 6 inches thick, and covering the pile with straw or fodder to retain the heat.

There is much testimony in favor of using salt as a manure, and it cannot be applied more advantageously than with the bones, because it promotes their solubility. It would be better to place the proper dose of salt with the gypsum upon each layer of the earth.

In reference to the quantity of bones to the acre, I may say, that after trying them in quantities from 30 bushels down to 10, I came to the conclusion that 10 bushels to the acre was the most advantageous quantity. I became satisfied also that this quantity, prepared as I have just indicated, and uniformly sown, will be as effective for a year or two as double the quantity applied in the dry state.

Should the soil be dry when wheat ground is dressed with dry bones, and continue so for some time after, but little effect will be produced by them upon the autumn growth.

The effect of the putrified bones will be obvious within a few days after the young wheat appears above the surface. The putrefaction in the first case goes on very slowly; but when the bones have been once heated, it will proceed more readily, and of course furnish an earlier supply of the much needed ammonia, as well as phosphoric acid.

One great advantage of bones over ammoniated guano arises from the fact that putrefaction and decay have progressed in the latter until nearly all the ammonia which they are capable of yielding has been already formed. And as it is very soluble in water, much of it is rapidly washed off during heavy rains, leaving a portion which is absorbed and retained in the soil. This is going on whenever the ground is wet, so that when the soil is not frozen in winter, the ammonia is passing off and there is no crop growing to appropriate it.

When bones are applied, either dry or in the manner I have suggested, they are giving out their ammonia as the crops require it, but in cold weather the putrefaction is nearly or quite suspended, according to the temperature, and again resumed in the spring; at first slowly and then rapidly in hot weather, when it is most wanted by the crop.

I have very rarely met with those who have

used bones for manure without being satisfied with their effects. Experience has shown, however, that their effects are not so promptly evinced in stiff clay soils as in those of a more porous character. The compactness of very stiff soil prevents sufficient access of air to assist in the decay of the bones. When applied to *very* wet soils, the animal matters decompose so slowly as to produce little benefit to crops.

About Good Butter.

We join our friend of the *Germantown Telegraph* in the inquiry, how is it, and why is it we can get so little, so very little good butter? We say *good*, really good butter, that has the taste of butter *and nothing else*, and the consistency and colour of butter. The Philadelphia market is noted for the quality of its butter, and if there is reason to complain there, how much worse is it elsewhere. There are a few fine dairies about Baltimore which furnish a very superior article, all of which is engaged by the season, and at a very high price. The Hampton butter, which is famous, brings an average, we understand, of some 60 cents a pound. But there are very few butter makers who can furnish an article so uniformly good that we should be willing to engage a supply by the season. There is, however, really no reason why the butter which commands no more than 25 cents the year round, should not bring 40 cents, as prices now go. There is usually no material difference between the best and the worst butter, except in the skill and care of the dairy management. In these there is very large room for improvement:

FRIEND EDITOR: In the *Telegraph* of the 15th inst., you say it is rarely a pound of first-rate butter is to be *obtained at any time and any price*, even in early summer, &c. Now, it seems to me, you do an injustice to the dairy people who attend your market and furnish their customers with prime butter in the spring, summer and autumn months. I have sold my butter in your town for five years to the same customers, and have frequently heard it remarked by strangers in your market that it is almost impossible to obtain customers, of the *right kind*, which is a pretty fair proof that the people of your town are well supplied with *prime butter*.

I will now give you our mode of making butter. I generally have my cows to come in profit in March, when I commence to feed them cut feed, corn meal and wheat middlings, mixed, which I continue feeding until I turn out to pasture, when I feed four quarts corn meal per cow, per day, for a month or six weeks. I generally sow corn to cut for my cows when pasture gets short, which I find pays well. We never allow the milk to stand to cream over forty-eight hours, skimming twice a day, and keeping the cream in the coolest place in the milk house. We churn once a week (Wednesday); we like to have the cream at a temperature of about 60° before commencing to churn, when it will require about ten minutes to bring butter. Immediately after taking the butter from the churn it is salted and "worked;" in the evening it is well worked again; and on Thursday it is worked for the third time and done up ready for the Friday morning market.

Before pasture we flavor our butter with carrots, grated and stewed up in new milk, strained and left to get cold. It is put in the cream before churning. P.

Horsham, February 20, 1860.

REMARKS.—We are glad our comments on the matter to which our correspondent refers, has brought him out. This is just what is desired. He imparts information on the subject of butter-making which can be read with profit by many dairymen who supply us with butter. The whole secret of making good butter is revealed by our correspondent. The frequent skimming, the temperature, the ten minutes churning, *the three times working*, (mark this!) and the flavoring when necessary with the carrot, as we suggested in our reference to the question. But we beg to say that we did no injustice, in a general sense, in speaking of the quality of the butter with which this market is commonly supplied. Every word of it was true; we did not say *no* good butter was *made;* but *generally* such was the case, especially in the winter season. We hope others will come out and show that the manufacturers of first class butter are more numerous than we supposed; for we shall like nothing better than to be convinced that the number of dairy people who make good butter, is not only large, but that it is daily increasing. All we have to say is, that of late we have been unfortunate in encountering any of them. Having found *one*, however, we hasten to say to our correspondent P. that he has also found an additional customer, and we shall look for a supply from him as soon as his cattle "come into profit." We are always ready to pay the highest market price for a first-rate article.

But why not have a portion of the cows to come in profit in autumn? A farmer, setting himself up for dairying, should have a sufficient herd to afford him a steady business the year round. His customers need good butter in winter as well as at other periods of the year. Indeed this is the time when they especially desire it, and when they are willing to pay an increased price—such price as cannot help to make the business a paying one. We speak not only for ourself, but for many others, when we say that from ten to twelve cents per pound over and above the ruling price of ordinary printed butter, would be promptly paid for what *we* consider a first class article.—ED.

GOOD PRICE FOR BEEVES.—We learn Col. Wm. D. Bowie recently sold to the butchers in Washington some of his fine beeves. He disposed of five altogether—two at $100 each and the others at $50 each, making $350 for the five. A pretty good price considering the state of the money market. These cattle were fattened at Col. B.'s "Charles Branch" place, under the auspices of that prince of good managers, Mr. Jeremiah Duckett.

The Grasses.

The Proper Management of Pastures and Meadows—The Best Plow for Turning Under Heavy Grass Crops.

Of the many errors that exist in practical farming, there is none more glaring, it seems to me, than the abuse of pastures. In a previous article, I adverted to the too common practice of turning stock, especially heavy animals, on clover fields the fall following the spring sowing. In April the stock have become tired of dry food, and not less so, perhaps, is the owner of the trouble of feeding them, and no sooner do the pastures begin to look green, than the stock is turned on them. What is the consequence? In the first place, the ground is trampled hard, and how can any reasonable man expect that grass can grow where the soil is little less compact than a sun-dried brick? He can readily see the necessity of plowing his corn, that the soil may be kept loose, because if he does not so keep it, the diminutive crop significantly points to his neglect, but if the pasture field looks bare of grass, or the milk pretty well dried up, or stock, generally, indifferently poor, it is not a good season for grass—it has not much strength in it, if it rains, and if the weather is dry, the drouth has parched the pastures, or somehow or other the stock didn't seem to do well. If the starving stock could speak, they would proclaim the cause.

But every farmer knows that if I pluck the leaves off his dwarf pears or other trees or shrubs, as fast as they appear, what the result will be. Death must speedily follow. The grasses are governed by the same physiological laws, although they more pertinaciously cling to life.—The blade is essential to the growth of the root, and every spring the grasses early put out a large number of new roots, upon which the plant must rely almost entirely for its subsequent growth. Check these by trampling the ground and keeping the blade eaten close, and the weakened plant can neither resist the droughts of summer, nor, in favorable weather, supply the stock with even a moderate amount of blades. Hence the principal cause of burnt up pastures in summer. Instead, then, of April pasturing, the farmer should still continue feeding, but he should consult the appetites of his stock, by change of food, substituting boiled or steamed roots, as the potato, or beets or carrots and parsnips, or the Jerusalem artichoke, and meal, for dry corn and hay. By the tenth or middle of May his clover is in bloom, or nearly so, the new roots are numerous and strong, the ground is mellow and dry, in all things well prepared to yield abundantly and resist the droughts of July and August.

If the farmer has plenty of land, and his principal business is stock growing, then he should be more systematic, and provide himself with a three-fold pasturage—an early spring pasture, a summer and fall pasture, and a winter one. Not a hoof should go upon either, except in the allotted season. On the first, sown in Kentucky and English blue-grass, stock might be pastured from the middle of March to the tenth of May; on the second, containing clover alone, or mixed with orchard grass and timothy, from the tenth of May to the first of November; on the third, composed of the English and Kentucky blue-grasses and the orchard grass, during the winter, as the snows or wet weather permitted. Such an arrangement would give the greatest amount of grass the soil could produce, and greatly lessen the labor of summer to provide food for winter feeding.

The Meadow.—If there is any word relating to agricultural pursuits that stirs the heart of the true lover of Nature, it is the word "meadow:" for there is associated with it everything that is beautiful, and many a reminiscence of youthful days, when the helping hand was given to the farmer in hay-time. What more pleasant than the scent of new-mown hay, during the morning and evening labors? Or what more cheering than the reflection that this labor will provide a gratifying food for the stock, in well sheltered stalls, during the inclement days of winter?

But, on the other hand, it is by no means cheering to see the meadow burnt up by droughts, with the prospect of having to sell stock at less than cost, for want of food. This is often the case, and the first question, in the management of meadows, is, how can we provide against such an evil?

As heretofore remarked, timothy is a late grass, and is liable to be cut short by drought. But clover and English blue grass are early, and hence a meadow of these should be on every farm. Both grow in tufts and will not displace each other, whilst the blue-grass will protect the clover from freezing out in winter. Both have a heavy second growth, and may be regarded as a fall pasture, should droughts affect the yield of ordinary pastures so much as to render it necessary to turn on the meadow; or it might be reserved for calves, colts and sheep, as an occasional winter pasture where the ground is frozen. These advantages are great, but heretofore they have been almost entirely overlooked. The finest looking meadow I ever saw was a mixture of these grasses, and the yield of most excellent hay, as stated to me by the owner, was very heavy.

Timothy meadows should be unmixed with other grasses, for no other ripens when it does, and the curing process does not require the care and method used for clover. This, too, is one of the few grasses that is most nutritive when made into hay at the time the seed is ripe, and if clover is mixed with it, and not cut until that condition of the timothy, the most of its stems will be dried, black and worthless.

The proper time for cutting timothy grass is one of the mooted questions in agriculture; but analysis shows that the haulm or stems and leaf of the timothy, when the seed is ripe, is of the value as 14 to 5 when it is in flower. This is, I think, a greater difference than really exists, but the too common practice of not cutting it until the seed is very ripe, cannot be too much censured, for it shatters so easily after the hay has undergone a sweat, that most of it is lost in feeding and hauling it. The stage of ripeness when the seed will vegetate, but not readily fall out of the head, is the best time for mowing.

Grasses as a Fertilizer.—As these remarks on the grasses have been written more on account of their utility as a fertilizer, than as food for stock, to that part of the subject I hasten.

The first matter to be considered is, at what

time should the grass be turned under, when green or when dry? Dr. Dana, a high authority as a chemist, and one who has given much attention to the subject of manures, states "that the sugar and starch of the plant, when plowed under green, are fermented by its gluten and albumen and converted into gases and alcohol; the former are lost in the air, and the last washes away or is changed into vinegar! All that remains for the farmer is the altered gluten and albumen, which soon putrefy and form geine. All the starch and sugar of the plant are lost. On the other hand, when clover is turned under immediately before sowing wheat, a large amount of water is given out or decomposed, which must greatly assist the growth of the wheat plant. I have seen an experiment of turning under a heavy crop of grass and weeds when green, in the fall, and the field planted in corn the ensuing spring. The soil was like an ash bank, light and thoroughly pulverized, but the corn crop was an entire failure. Others have informed me that this is their experience. The gases are lost during the winter, and I would advise against plowing in whilst the grass is green, unless the field is to be planted or sown immediately.

But the objection to plowing under heavy grass crops, either green or dried, made by nearly every farmer, is in the want of plows adapted to this purpose. But few things are more aggravating than a plow choking every fifty yards, and hence the common practice of burning off stubble, and the dried wild grasses, in spring plowing—a practice which tends much to the speedy exhaustion of the soil, and to render it heavy and compact. By our best farmers, no complaint has been more urgently made to plow-makers than the want of a plow to properly turn heavy grass crops; and the trials at our State and county fairs do not test, in the least, the capability of a plow for this most important purpose. In the last eighteen months, Seward & Sons, plow manufacturers, at Bloomington, Indiana, have so perfected it, as to turn any crop under to the entire satisfaction of the farmer. Their principal improvement consists in giving to the plow much greater *lifting* power, and by a proper balance of it and the *turning* power, the furrow slice, with its top growth, is drawn from under the beam, and so completely turned as to show but little of the grass. I regard their plow as the salvation of our too rapidly exhausted lands. The greatest difficulty which has heretofore existed against grass manuring may now be considered as removed, and the plow, the great destroyer of the fertility of our soil, will become its great restorer. For mold, or vegetable matter is the life of that fertility, and this mold is "the half-way house of decay," which plants undergo from the time their life is extinct until they are resolved into those gases out of which they were originally formed. The absence of light and heat keeps the mold from final putrefaction; but when the plow, by turning it up, frequently subjects it to the influence of light and heat, the mold hastens to that last state of decay when vegetable matter is changed to its constituent gases. It is too much plowing, therefore, which causes the "diminution of American crops." We must make the plow a restorer, and not a destroyer.—*Cor. Cincinnati Price Current.*

Italian Bees.

We publish below an account written to the Commissioner of Patents by Mr. S. B. Parsons, of his purchase of Italian bees for the Agricultural Department. It will be read as an interesting account of a new enterprise in the importation of live stock, which may prove of much importance to our domestic economy. This importation, however, has been anticipated by a citizen of Maryland, Mr. Richard Colvin, who owns the patent for the State of Ohio of the justly famous Langstroth Hive. Mr. Colvin introduced the Italian bee successfully, we learn, into the State of Ohio, about a year ago:

PARIS, *January* 19, 1860.

In accordance with my instructions from the Patent Office, I arrived in the country of the Italian Lakes in April, 1859, and commenced searching for Italian bees.

I wandered about among the hills of this delightful region and examined many hives, but could not feel satisfied that any of them were of the pure Ligurian stock. The Italians are not a careful people, and it is difficult to find among them sufficient knowledge or skill to keep pure any kind of stock. The approach of hostile armies stopped my further researches for the time, and I was obliged to wait until the conclusion of peace for further efforts.

In the following September, as I was about leaving my Swiss home for another trip into Italy, I learned that an intelligent Bavarian, named Hermann, had established himself in the Grisons, and had devoted himself with much enthusiasm to the culture of pure Italian bees, which he collected wherever he could find them, but mostly from the vattelin.

I visited him at once, examined his hives, and was convinced that they were pure. I purchased of him for the Department to the full amount I was authorised to expend, and ordered them to be sent by the Arago on the 18th of October from Havre. By some unaccountable delay they were not shipped until December 28th from Genoa. They are doubtless now on their way, and will, on their arrival in New York, be forwarded at once to Washington. I sent by the same vessel a few hives for my own use, and, in order to insure the thorough introduction of this breed, I have purchased one hundred additional hives for myself, which will be shipped next month, and from which, during the ensuing summer, I shall be able to supply many who desire them.

Since I last communicated with the Department, I have had additional intercourse with European agriculturists, and am increasingly impressed with the great value of this species. It was not introduced into Northern Europe until 1853, and its introduction is every year more appreciated as a new era in bee culture. Its introduction into the United States may no less constitute a new era, and the Patent Office will deserve the gratitude of the country for its efforts to obtain it. This will be the better understood when the profits of bee culture shall be so generally appreciated that every farmer will have his hundred hives, the inmates of which will gather

up the multitude of sweets which now are lost, and yield to their owner, according to his care, from three to ten thousand pounds of honey, or, according to Langstroth's lowest estimate, five hundred dollars per annum profit. It cannot be doubted that the Italian bees will entirely take the place of our common species, for the reasons: 1st, that they will endure the cold better; 2d, that they swarm twice as often; 3d, that their queens are abundantly more prolific; 4th, that the working bees begin to forage earlier and are more industrious; 5th, that they are less apt to sting, and may be easily tamed by kind treatment; 6th, that the queen may be so educated as to lay her eggs in any hive in which she is placed, while the bees of such a hive, deprived of their own queen, will readily receive her; 7th, that its proboscis is longer, and it can reach the depths of flowers which are entirely beyond the efforts of the common bee. The importance of this last superiority cannot be too highly appreciated; 8th, that a young queen, once impregnated, will continue fertile during her life—from four to seven years. This quality will insure pure brood, till the whole country is filled with them; 9th, that they are far more brave and active than the common bee, will fight with great fierceness, and more effectually keep the moth out of the hive.

They can be easily distinguished by a broad yellow band around the abdomen.

I feel assured of their susceptibility to entire domestication, for I went in among them without any protection, unless a cigar could be considered such. My companion uncovered the hives and took out the bees, which swarmed around me in great numbers, but did no harm, except one, whom I treated rather roughly when he alighted on my finger.

It is the custom of the Italians to take them up on the highest Alps, and I therefore feel certain of their great hardiness.

I believe that this bee will soon prevail in the United States and drive all others out of culture. This will result from a conviction everywhere of the large profits to be derived from its propagation and its labor. To import a hive of full size from Europe will cost from twenty to twenty-five dollars.

It may be, therefore, safely assumed that, for a couple of years to come, the demand for these bees will be very great, at ten dollars for a queen impregnated, which will produce thirty thousand workers and at least fifty queens in one season. For, perhaps, three years more, their value will be five dollars, and less, until the country is fully stocked with them.

As soon as the demand fails, the possessor of them is thrown back upon their labor for his profit. Their labor will be more productive than that of the common bee, and Langstrotte gives the produce of the latter from thirty to a hundred pounds of honey for each hive, besides the wax. His lowest estimate is five dollars profit per hive.

A German writer says that from one Italian queen he obtained more than one hundred and thirty fertile young queens, but I state fifty as a safer number. The great value of this breed is the safety and ease with which they can be handled and divided up. When it is recollected that each hive will make fifty others in the first year, and, consequently, twenty-five hundred others the second year, and then, when the demand fails, each colony or hive will produce honey to the value of five dollars, it will be readily conceded that its money power will speedily settle the question of its general introduction.

It must not be forgotten, however, that success in this, as in all high breeding, requires care and attention, and for want of this some may be disappointed in their results. The facts I have stated are asserted by the best agriculturist in Europe, and may be considered reliable.

With regard to some other points in the description of Italian bees I find my notes confirm entirely the remarks and letters given in Langstroth's valuable book, and I will, therefore, not repeat what you can read better there.

Every one interested in bees should not fail to buy this book and read it. In no other can he find so much valuable information, or learn so well what veritable slaves of the lamp these little insects are, giving to their master three-quarters of their earnings, and demanding in return no food and but little more attention than a woman or intelligent child can give.

To this book I must also refer you for the best mode of introducing Italian queens to our native stock, or dividing up whole Italian colonies. I cannot perceive that the German or Italian scene differs materially from it.

Trusting that the bees will reach you safely, I remain, very respectfully, S. B. PARSONS.

WM. D. BISHOP, Commissioner of Patents.

Soil Analysis.

Prof. Johnson has set himself in array against a new theory of Liebig's, for one thing, and scouts the utility of soil analysis, for another. Those who have read Liebig's recent pamphlet on "Modern Agriculture," will remember his doctrine that mineral matters are not in a soluble state in the soil, in support of which he quotes the experiment of passing through a sample of fertile soil, water holding in solution phosphoric acid and other plant foods, and thereby removing the salts entirely. The formerly soluble mineral matters he supposes to have been made insoluble in the passage through, and putting this and that together, he says that if this be the case, why then plants must actually have the power of taking in the insoluble material which they need for their growth, and making it soluble after it gets within their spongioles. Johnson thinks Liebig's theory would be very pretty if the little *if* were removed. In other words he says that Liebig's experiment was rudely performed and that the mineral matter was not and never can be entirely removed from the water, and hence Liebig's superstructural argument falls, like the Pemberton mills, for want of a sound basis. He says he knows of beans and other plants having been grown and ripened in naught but a watery solution of mineral and organic food—a fact which goes far toward proving that soluble matter is used to full advantage by plants when they can get it. Although I do obeisance to Liebig, I think Johnson is right in this instance, and so I think do many others.—As to soil analysis, Johnson reasons thus: One foot deep of the soil in an acre weighs 2,000,000 pounds; a crop of wheat will remove say 200

pounds; if that 200 pounds be not in an available state, no crop will grow; to know if there be enough for the crop, you take a little sample, say 100 or 1000 grains, and analyze it; now, does any man living expect the chemist to tell by even the most miraculously sensitive balances or tests of the infinitesmal sample, whether the 2,000,000 pounds contain enough phosphoric acid or ammonia, or other ingredients to raise a crop? Take a barren soil, for instance, or one called so, on which the application of 400 pounds of guano will make all the difference of sterility or a crop; now, can a chemist tell in his laboratory, by testing 100 grains of that soil, taken promiscuously from all parts of the field, whether the guano had or had not been added? Verily not, says Prof. Johnson. And so our young agricultural chemist takes issue on the question, and is prepared to do battle with our beautiful pet theory *a Poudrance.** He thinks that if one would take 50 pounds of soil, and wash it with an enormous quantity of water to dissolve out the soluble salts—a little job which would take at least a fortnight, and might a month—he might, by analysis, find whether there was a great excess or deficiency of plant food in the field from which the sample came. But the cost and trouble of the experiment are serious objections to putting the scheme into practice.

The most fertile soils contain the finest particles, or in other words soils are like linen, better for having fine texture. Most soils are deficient mechanically rather than chemically.—There is great store of plant food, but not finely enough divided. A field, therefore, which, in a certain state of pulverization, will produce 15 bushels of wheat, would, or should, yield 30 if worked up twice as fine. Why? Because there is twice the amount of surface of particles exposed to the action of heat and rain, and therefore twice as much plant food set free. Take your multiplication table and figure up this idea as far as you like, and then you will see the use of subsoil plows, and clod-crushers, and good harrows, and deep plowing, and all these modern contrivances for breaking up our fields into a good seed-bed.—*N. Y. Tribune.*

*The writer for the *Tribune* should know that this "pet theory" was exploded as long ago as 1853 by Major J. F. Lee, of Washington, and Professor Booth, of Philadelphia, who made the same argument against it that Prof. Johnson now uses, and that Prof. Johnson himself published the same opinion five years ago.—*Ed. Am. Far.*

Raising Young Turkies.

In our boyhood, the good old woman who nursed the young turkies considered it a religious duty to take each one, as soon as it was dry from the shell, and dip it in a basin of cold water. Then it was carefully relieved of the pip on the end of its bill that had been used for working out of the shell, and then a whole grain of black pepper administered. We did not at the time understand the philosophy of this treatment, nor do we now, but it was considered absolutely essential to the profitable existence of the young turkey. We should omit now all these processes.

Richardson, in his work on the Domestic Fowl, has these remarks:

Many writers recommend a vast deal of quackery in the treatment of the young chicks. Some go the length of ordering them wine, pepper, bathing in cold water, &c. It is far better to let them alone. For a few hours after hatching, the chicks require no food at all; and then, instead of cramming them—a process in which you are likely to break the tender beak of the little chick—chop up a few hard eggs with boiled nettle, parsley and a little bread or curd; make this into a paste, and present it to the birds in the palm of your hand, or place it before them on a stone, taking care that the hen does not rob them. In supplying them with water, be careful to put it into very shallow vessels that they cannot wet themselves; for the least moisture appears fatal to them. As the turkey chick does not seek its food immediately on leaving the egg, and the hen seems incapable of instructing her little offspring how to do so, it is a practice with some to put a few common hen's eggs among the turkey's, (which must be done nine or ten days after setting,) that these coming out with the little turkies may, by force of example, teach them to provide for themselves.

Unless in very warm weather the hen and chicks should be housed for a month. If they appear drooping, put powdered caraway seed, and a little Cayenne pepper into the food. If you mix the food with milk, let it be previously boiled. Unboiled milk will purge the chicks; but for my own part I prefer pure water.

At the age of about two months occurs the most critical period in the life of a turkey, called "shooting the red," or the time when the head and neck acquire the reddish color of adults.—This crisis once past, the birds may be regarded as past danger, and exchange the name of chicks for that of turkey poults. The only treatment necessary when a bird is shooting the red, is to furnish nutritive food with a small pinch of Cayenne pepper. Bruised hemp seed is also found serviceable.

Take care that young turkies never go out on any account, (except in dry weather,) until the dew is off the ground; and this should be adhered to till they get to be the size of an old partridge, and have their backs well covered with feathers; and in wet weather they should be kept under cover all day long. As to the feeding of them when young, many nice things are recommended—hard eggs, chopped fine, with crumbs of bread, and a great many other things, but that which I have seen used, and always with success, and for all sorts of young poultry, is milk turned into curds. This is the food for young poultry of all sorts. Some should be made fresh every day, and if this be done, and the turkies be kept warm, not one out of a score will die. When they get to be strong they may have meal and grain; but still they always love the curds. When they get their head feathers, they are hardy enough; and what they want is room to prowl about. It is best to breed them under a common hen, because she does not ramble like a hen turkey; and it is a very curious thing that the turkies bred up by a hen of the common fowl, do not themselves ramble much when they get old.

The American Farmer.

Baltimore, April 1, 1860.

TERMS OF THE AMERICAN FARMER.

Per Annum, $1 in advance—6 copies for $5—13 copies for $10—30 copies for $20.

ADVERTISEMENTS.—For 1 square of 8 lines, for each insertion, $1—1 square per annum, $10—larger advertisements in proportion—for a page, $100 per annum; a single insertion, $15, and $12.50 for each subsequent insertion, not exceeding five—payable quarterly in advance.

WORTHINGTON & LEWIS,
Publishers of the "American Farmer,"
CARROLL HALL, S. E. Corner Baltimore and Calvert streets, Baltimore.

☞ There are several points in the communication of Mr. Reynolds which are worthy of special attention, while the whole of it will well repay the reading. That experimenting farmers should report "the result of their experiments, *good* or *bad*," is a point that requires insisting upon. It is far too much the case that favourable results are made public, and unsuccessful ones kept in the dark, not so much from any purpose, but because the experimenter loses his interest in the matter as soon as he has satisfied his own mind. But every man owes it to his fellows to give them the benefit of his experience for what it may be worth, and a great many valuable experiments and observations are confined to the narrow circle of a man's personal acquaintance, when they might equally benefit thousands and tens of thousands if published in an agricultural paper. The light is "hid under a bushel" when it should be placed "upon a candlestick."

As to questioning candidates for our Legislature when making their "corn-field talks" upon the stump, about what they mean to do for "corn-field interests," that is a matter well worthy of note. Just so soon as legislators see that farmers are alive to their own interests, and that they mean to see them maintained, will they become obedient to their will. Nor should we wait till they are elected, but know of them beforehand how they stand upon any important question affecting agricultural interests and get their pledge and assurance in advance. After all, the trouble is not so much with legislators, as with the farmers themselves, who "care for none of these things." They complain that things are done wrong, but they will not *see to it* that they are done right.

The rigid inspection of Fertilizers is another point which we are glad to see intelligent farmers are awaking to the necessity of. We have not failed to speak out on this matter, and especially because we appreciate the great value of the portable fertilizers to the farming interests. A proper scrutiny will benefit an honest dealer in proportion as it protects the farmer. We have until very recently stood alone in pressing this matter, and the course we have thought proper to pursue in the discharge of our duty upon this subject of the trade in fertilizers, provoked some time back the significant threat from a dealer, that it did not meet the approval of "the people in this city." A careful comparison of the advertisements of fertilizers in our pages of this month, with those of the corresponding month last year, will show the interested reader that the admonition was not an idle one; while our fullness to overflowing of substantial advertising matter indicates as plainly that our interests are not suffering.

☞ Mr. John Johnston desires us to correct an error which occurred in his communication in our March number. He says, we make him say, "they (sheep) will fat fast on 1 lb. of grain (either corn or barley) and 1½ lbs. of oil meal," but that it should read, "1 lb. each of corn or barley and ½ lb. of oil meal; on this they fat very fast, but whether small sheep—say those weighing about a hundred pounds live weight, to commence with—will pay for such high feeding, I cannot say, as this is the first season that I have fed over 1 lb. of grain or oil meal daily, to each sheep."

Soyer's Great French Henery.

We published some two years ago an interesting and very circumstantial statement of the method of management, &c. of a very large establishment near Paris for the production of eggs, by a M. Soyer. A subscriber in Virginia, from whom we received a note some months since, made diligent inquiry through several agencies at Paris, and could hear nothing of such a concern. The article alluded to went through the papers at the time without question as to its character. We should be glad to learn whence it originated, and whether it was or not a hoax.

OUR JANUARY NUMBER.—If some of our subscribers who do not preserve their papers will take an opportunity to return the January number, they will confer a favour upon us. The edition we had printed was thought quite sufficient for any probable call on us, but an unusual demand has entirely exhausted it, and we are unable to furnish that number to new subscribers whose names we are constantly receiving. Since January we have increased our number sufficiently to ensure an ample supply.

To JOHN MERRYMAN, ESQ.,
Pres. of the Md. State Agricultural Society.

DEAR SIR; In the March number of *the American Farmer*, I published an article with reference to the State Agricultural Society, which you have no doubt read. I do not believe that you have misunderstood the tenor or purpose of that article or the motives which prompted it, because I know that you can comprehend plain English, and do not believe you have an unworthy motive to misinterpret or pervert its evident meaning. I desire however to take away even from malice itself, all excuse for misrepresenting me, and to disclaim, distinctly and without reserve, the remotest design to reflect unkindly upon yourself or your associates in the matter of the appropriation by the Legislature to the Society. I think that in this and, so far as I know, in every matter entrusted to your immediate charge, you have faithfully and properly discharged your duty, and that the Society to-day owes its existence, to the characteristic energy which you have brought to bear upon its affairs.

Nor was it any part of my purpose to condemn or find fault with *any* administration of its affairs. In doing so, I must of necessity bear my portion of the condemnation, for as you well know, through its whole existence, with the exception of one year, I have been, as I am still, a member of the Executive Committee of the Society.

My argument was as to the general policy of the Society within the few years past, and was designed to show by the action of prominent Farmers in the Legislature, representing agricultural districts, that it had failed to enlist the sympathies of the community, to whose interests it claims to be devoted; to inquire why this was so; and in the proper discussion of the past policy and action of the Society to find perhaps a remedy. I am sure, Sir, you will recognize these as legitimate subjects of inquiry, by one who desires the highest good of the Society, and I call upon you and the gentlemen associated with you from every county in the State to join me in the inquiry. I cannot think that either you or they are satisfied with the present aspect of its affairs. Let us see if we may not mend them. Let us see if we cannot strike out some new course which may command the sympathies and the cheerful spontaneous support of the whole farming interest. I do not profess to have fallen upon any such course, but it is worth thinking about.

I do not underrate the uses of an annual exhibition of stock, implements, &c., but I think its importance may be overrated. I wish to see an association of the gentlemen of the State, called "the State Agricultural Society," holding its existence independent of the expensive machinery of a cattle show. I wish to see such an Institution raised above a dependence upon an annual exhibition of stock and implements. I wish to see it not only independent of such support, but elevating the range of its vision to *all* the branches of our agriculture, and embracing all its varied interests. Can this be done? I speak only by way of suggestion, earnestly desiring to call the attention of the intelligent farmers of the State to so important a subject.

Laying aside for the present the question of a Cattle Show, and supposing it to be determined to be expedient not to hold one this year, and hereafter but once in every two or three years, is there no rallying ground on which we may bring together the Farmers of the State at least once in the year?

Suppose our Society should give notice in advance that the last week in October, or some other week, had been set apart for a grand social re-union of the Farmers of the State, and that they be especially urged to make this the occasion of their annual or semi-annual visit to the city. Let us rent for the occasion a suitable hall, where at stated hours each day, public meetings may be held for the discussion of such topics bearing upon agriculture as may have been determined beforehand, and of which previous notice may have been given. In addition to this, lay out the $500, the annual appropriation of the State, in medals, or plate with suitable inscription, for the best essays on subjects embracing all the agricultural interests of the State; an essay on fruit culture; stock growing; the management of a Tobacco plantation; of a grain farm; the improvement of worn-out lands; the best barn yard management; the best dairy management; agricultural education; and such other subjects, as will show to the Farmers of the State, that the Society is looking to all their varied interests; these essays to be read and the medals awarded at some public meeting of the Society, and to be gathered afterward in a volume of Transactions. May it not be hoped that such a gathering would attract the leading minds of the State, and that very many who have ceased to take an interest in Cattle Shows, and very many others who are driven away by our horse races, (I mean the members of the Society of Friends especially, some of our most intelligent and successful Farmers,) would attend in large numbers, and that old and young would be alike interested in so pleasant and instructive a re-union, and that such a spur and stimulus would be given to the agricultural *mind* of the State, as it has not had in a quarter of a century.

Hereafter, when our plans are more matured, we might hope to make our College the agricultural centre of the State, and hold there our annual Farmer's jubilee, and in addition to such attraction as the Society might offer, everything of value and interest at the College would come each year under public review, while ploughing matches, and riding matches, and foot races, and manly games and sports on the part of the students, may add to the interest of the occasion.

These, let me repeat, are mere suggestions, thrown out for the purpose of drawing attention to an important matter, in the hope that other minds may take hold of it and mature something better. I wish to get rid of the idea that a State Agricultural Society is dependent upon a Cattle Show, while Cattle Shows are too dependent on trials of speed, and petty side shows.

One word as to the annual exhibition of this year, should there be a disposition, as I presume there will be, to hold one. The experience of last year, will I think, settle the question as to the practicability of holding a successful exhibition elsewhere than at Baltimore. We cannot hope for better terms or a better exhibition at any other point, than we had last year at Frederick, yet we failed to pay expenses. But we cannot hold at Baltimore a first class show without a large increase of our premiums, and only a first rate show will pay. Offer an attractive premium list, and you draw a crowd of exhibitors, and crowds of people to pay your expenses. For this purpose you want money and Baltimore is able and ought to be willing to furnish it. I think the Society of itself should incur no risk beyond the limit of its premiums of last year, but that it should advance its scale at least fifty, or, better still perhaps, a hundred *per cent.* and make an appeal to the citizens of Baltimore to insure it against loss, and make the exhibition of this year *dependent on such an insurance.* The business men of Baltimore as such, have a much more direct interest in the exhibition, than the people of the State, and they should incur the risk and the loss, if any. I do not believe, however, there would be a loss. I believe a liberal scale of premiums, and that alone, will make an exhibition to pay.

Moreover, it should be required of the city authorities as a *sine qua non*, that the Society be put to no cost to protect itself and the visitors on their grounds, against the bands of ruffians who infest the city. After the experience of the last two exhibitions, I think we cannot deliberately place the Society in a position, where we must of necessity submit to the degrading demands of notorious rowdies and bullies, who require to be paid to keep their companions and accomplices quiet.

I shall hereafter perhaps call your attention to other matters in this connection, in the hope that such interest may be excited in the affairs of the Society, by the Farmers of the State at large, as may lead to a more general attention on their part to its management, and with no design to criticise or find fault, except for the purpose of amendment and improvement.

Very truly, yours,

N. B. WORTHINGTON.

The Maryland Agricultural College.

A meeting of the Trustees of the Maryland Agricultural College, was held at the College, on Tuesday, the sixth of March. There were present, Messrs. Calvert, President, and Messrs. Carroll, Earle, Davis and Worthington.

Reports were submitted to the Board by the Register and by the Faculty of the College, embracing such matters as relate to the several departments of the Institution.

The Committee on the Farm took into consideration several plans, submitted by Mr. Earle, as to the system to be pursued in carrying out the views of the Board in the management of the farm.

Mr. Calvert is still acting at the request of the Board, as President of the Faculty, but such action was taken, at his urgent request, as will, we hope, relieve him of this responsible duty, and result in securing a permanent head to the Institution. We cannot over-estimate the importance of getting at the earliest practicable time, an efficient chief officer, who shall devote himself exclusively to the duties of his position. The College has opened most auspiciously, and the constant accession to its number of students, shows that its management has in a remarkable degree the confidence of the agricultural community. We can only express the hope and the conviction that the Board will remit no effort to meet the just expectation of those who are committing to them, a charge of so grave a nature as the proper culture of their sons.

HUNGARIAN GRASS.—We are glad to hear from Mr. Henry Carroll, Jr., a very favorable opinion of the value of this crop for hay. Mr. Carroll has been cultivating and using the Hungarian Grass for several years, and finds it to yield heavy crops of hay, (three tons to the acre, the past year, on twenty acres,) which is preferred by stock to any other. It produces seed abundantly without losing its value for feeding. In less than ninety days after seeding, the crop is fit for the scythe.

Plaister on Corn and Tobacco.

A correspondent in N. Carolina, asks advice as to the proper mode of using Plaister on Corn and Tobacco.

Our own practice is to prepare seed corn with tar always, by rolling the corn until it takes a thin coat of tar, and to throw upon it Plaister enough to keep the grains apart, and we use no more than this early in the season. Others drop a teaspoonful on the Corn after it has come up. The method of using which is thought to make the greatest increase of grain, is a broadcast sowing over the Corn, when it is just so high that the man sowing it may throw it well over the top of the Corn.

On Tobacco, the almost universal custom is, to throw a small spoonful on the plant immediately after the first weeding or working with the hoe. This weeding, as good planters know, should be done at a very early period after planting, and before the grass gets well hold of the ground; the Plaister should follow immediately, and has the effect of causing a quick early growth, so much to be desired. The action of Plaister, though capricious and varying with change of soil even in the same field, is very remarkable. We have seen an increase of four or fives times the weight in plaistered Tobacco, over unplaistered rows left for comparison. Both for Corn and Tobacco, we prefer putting the Guano and other manures by a shallow ploughing under ground before planting, and using the Plaister uncombined.

The Law with Reference to the Tobacco Warehouses.—We have not been able to get a copy of the bill passed by the Legislature with reference to the sale of the old Tobacco Warehouses and the erection of new ones. It appoints Commissioners to superintend the sale of the buildings; and other Commissioners to lease the Warehouses to the highest bidder; the parties leasing to receive the whole amount arising from outage, staying, storage, &c., giving bond for the payment, quarterly, of rent, and the proper performance of their duties.

John A. Washington, Esq.—We are pleased to learn that this gentleman has accepted the Presidency of the Piedmont and Valley Agricultural Society, a new Society whose exhibitions it is proposed to hold at Alexandria.

The Grain Inspection Law.—We regret to say that the bill which we published last month, to remedy the defects of the present Grain Inspection Law, and which passed the Senate, was lost in the House of Delegates among the mass of bills not acted on for want of time.

The Tobacco Trade.

The enormous duties levied upon our Tobacco exports have been long a subject of unavailing complaint. There has been no one step taken in advance, by which we may anticipate or hope for relief. But should we therefore give it up? Are not the millions of tribute, which this interest is paying annually to foreign Governments, a prize worth contending for? We copy below resolutions recently adopted by the Legislature of Kentucky on this subject.

There is a political view of this matter which is worthy of consideration. The great and growing profits of the Cotton and Sugar culture are gradually, but surely, draining the tobacco-growing slave States of their slaves, and the institution of slavery is by this means losing, slowly it may be, but certainly, its strongest hold upon the States of Virginia, Maryland, Kentucky and Missouri. This is a state of things to be deprecated by the whole South. The cotton and sugar States want all the material and moral force of these States to stand by them in the controversy which it seems they must forever wage against their enemies. And *we* want no such change as the going out of slave and the coming in of free labour necessarily involves. Apart from the few who have conscientious scruples on the subject of slavery, we can safely assume that there are almost none in the States named, who, on a candid comparison of the condition of society in the slave and the anti-slave States, desire to have any change. We are satisfied as we are. We believe that our present condition is best for our slaves *and best for ourselves*. We wish to be let alone, by Northern intermeddlers on the one hand, and on the other by the cotton princes, who will buy us out, and hand us over to "free-soil" against our will.

We want then crops, that will take up this controversy with "King Cotton." We want crops that will yield us a profit more nearly approximating the great Southern staples. We want to keep our slaves *and our homes*—for our Maryland and Virginia homes are no longer our homes in any such sense as we have known, and ever wish to know them, without our slaves. The Tobacco is one such crop, if we could get these extraordinary duties even in a measure abated.

The following are the resolutions of the Kentucky Legislature:

1. *Resolved by the General Assembly of the Commonwealth of Kentucky*, That tobacco, one of the great American staples, has for more than fifty years been the subject of the most burthensome taxation; that whilst there is a tariff of 30 per

cent. protection on sugar, and cotton is admitted in all the ports of the world duty free, and breadstuffs, and beef, pork and lard are subject to the payment of only a nominal duty, tobacco, the great Western staple, is subject to a foreign duty, before it can be sold in the principal foreign markets, of seventy-seven dollars per one hundred pounds.

2. That the Federal Government has the power to fix the details of commercial treaties upon the principle of reciprocity and mutual expected benefit; and that such treaties have now become the policy of all civilized nations, our own included; and while every other product of this country has been placed upon the most favorable footing, tobacco has been wholly neglected, and this great interest has been left to languish at home, and feed and clothe and pamper princes and nobles abroad.

3. It is the duty of the United States, in all future treaties with Great Britain and other foreign powers, where the American tobacco is sold, to insist upon placing tobacco upon a footing with other productions exported from the United States to foreign countries.

4. That if all other means fail, then we demand countervailing duties upon the productions and manufactures of those Governments, who have filled their exchequers, and supported their royalty, by exactions wrung from American labour.

5. That the Governor be requested to transmit copies of these resolutions to our Senators and Representatives of the Congress of the United States, and ask them earnestly to appeal to the bodies of which they are members, in behalf of this long neglected interest.

Meeting of the Executive Committee of the Maryland State Agr. Soc.

BALTIMORE, March 6th, 1860.

The quarterly meeting of the Executive Committee was held this day, agreeably to the requirements of the Constitution. Present: John Merryman, Esq., President, and Messrs. Ware, of Va.; Jacobs, of Harford county; Lowndes, of Talbot; Bowie and Mullikin, of Prince George's; Brune, of Baltimore city; Richardson, of Cecil; and McHenry, of Baltimore county.

Letters from Dr. S. P. Smith and F. Cooke, Esq., were read, apologising for their absence.

The proceedings of the last meeting were read and approved.

The President stated to the Committee that the Legislature of Maryland had passed the bill prepared in accordance with the memorial of the Society, granting $5,500 for its relief, and $500 annually thereafter towards paying premiums to exhibitors at our Cattle Shows.

Mr. Jacobs moved that the President, with Messrs. J. H. McHenry and F. Cooke, be a committee to receive the amount of the State's donation, and that they be authorized to audit and settle the claims against the Society. Mr. Brune seconded the motion, and it was adopted.

The President presented several propositions in regard to locations for the future exhibitions of the Society. After an interchange of opinion upon the subject, Mr. Bowie moved that a committee of three be appointed, of which the President shall be the chairman, to consult with the Canton Company and other landholders, in regard to a location for the future Cattle Shows, after the expiration of our claims upon the present grounds—which was adopted, and Messrs. Brune and McHenry were appointed, with the President, as the Committee.

Mr. Brune moved that the Committee appointed to receive and disburse the funds from the State, be authorized to effect a settlement of the late Treasurer's accounts, and all claims in favor of, or against the Society—which was concurred in.

The Secretary presented a statement of the claims against the Society, as far as they had been filed with him, after notice duly given in the public papers—and also a statement of the resources of the Society to meet the same.

Mr. Jacobs offered his resignation as Vice-President for Harford county, and nominated John Moores, Esq., to fill the vacancy. No one seconding the resignation, it was declared not accepted.

The Committee then, on motion, adjourned.

Test, SAMUEL SANDS, *Sec'ry.*

☞ We are indebted to Mr. Harris of the *Genesee Farmer*, for a complete set from 1855 to 1860 inclusive, of his *Rural Annual* and *Horticultural Directory*, one volume of which has been issued annually. We have had occasion before to speak of these little volumes and the large amount of useful matter they comprise in a small compass.

LIGHTNING CONDUCTORS.—We call the attention of our readers who may be interested in the subject, to the advertisement by E. Whitman & Co., of a new conductor, which appears to combine several important advantages over the common rod. We have not space to point them out particularly, but a careful reading of the advertisement will show in what they consist.

A correspondent in Pittsylvania county, Va., writes as follows of the *Sorghum:*

I cheerfully add my testimony in favor of Sorghum as food for stock, not only hogs, but horses and cattle; my horses and mules particularly fattened faster on it, with the addition of corn, than any green food I ever tried, indeed, I consider it almost, if not quite equal to oats; I greatly prefer feeding it in the green state, in consequence of the hardness of the stalk after drying; the hardness, however, may be obviated by steaming or boiling, and treated in this manner it is excellent food for hogs, especially with the addition of a small quantity of meal or roots of some kind, turnips for instance. Upon the whole, I think, rightly managed, it *ought* to become an "Institution" among us.

CALIFORNIA GUANO.—We are pleased to learn that there is likely to be a further supply of California Guano, from small islands in the neighborhood of the Elide Island; that Island being, as we have said before, exhausted.

[For the American Farmer.]

Elide or California Guano.

For oats, corn, tobacco or potatoes, this variety of guano will "pay better" than any other. This opinion was based on the anylysis of several samples received *at long intervals* from *different* persons in Baltimore and New York. Experiments upon my own farm, and especially those upon the experimental lot at St. John's College, Annapolis, and its successful application on the other side of the Severn, in Anne Arundel county, *on tobacco*—all abundantly confirm the opinion that I expressed last year, as above, viz: that it was the cheapest guano for all of our spring crops. When this guano was *first* introduced, the reports of the analysis of many others were published, but I claim to have detected its *peculiar* value. By referring to these reports (published in the *American Farmer*) it will be observed that while others based *their* valuation on *ammonia* and *phosphates*, I attributed its *peculiar* value to their association with *alkaline salts*, and especially the *large* proportion of *potash* that distinguishes it from *all* other varieties of guano that I have examined. No other report of analysis has noticed this peculiarity, and therefore I wish to explain that the mode of estimating the value of manures that is usually adopted (and that has been recently endorsed by good authority in our own State)—although it emanates from Yale—*is an unfair and erroneous mode.* The value of guano, and especially of manipulated guano and all other manufactured manures, does *not* depend on the *amount* of ammonia and phosphates, but quite as much importance should be attached to the *proportion* of these, and the presence of *other "plant food"*—especially by those who cannot detect one part of this food in one million parts of soil, and who profess to use all of these manures *empirically*, without knowing whether one or all are deficient in the soil.

Extremes should be avoided—ultra views with regard to ammonia and phosphates are apt to land men in the very opposite errors. The man who first used bones dissolved in "oil of vitriol" is now opposed to solutions of bones. The man who introduced the ammonia theory, is now *accused* of being an *ultra mineral* theory man by his followers, who are more ultra in the ammonia theory than he ever was; and the very men who a few years since madly talked about weighing the earth *in a balance*, and dosing the soil *"by line and rule"*—(like the cockney turned farmer, who repudiates all surveyors of land who do not measure a farm with the same accuracy as a city lot—who counts the grains of wheat that he sows on an acre, and measures each furrow with a foot rule)—these fanatics are now engaged in ridiculing all attempts to approximate to soil analysis, by boldly asserting that 300 lbs. of Peruvian Guano constitutes the difference between a sterile and a fertile soil—*ergo*, soil analysis is a failure until this minute *proportion* can be weighed—men who cater to the vulgar prejudices of the servile followers of European authorities by ridiculing all that they think impossible. The opinions of such men should be taken with a grain of salt, always. Not even Pusey and Lawes, or the most ultra ammonia men, would dare go so far in their opposition to the mineral theory as do these men.

If I can secure a few pages in the *American Farmer* during the ensuing summer, I hope to exhibit some of the modern errors that are now beginning to spread among the agricultural papers of our country. It would be impossible to notice all, as their name is legion, but there are *one or two* that I conceive to be particularly mischievous; and I should classify them under two general heads: 1st. The mistakes in estimating the value of manures. 2. The empirical application of manures, and the reasons why many agricultural chemists discard soil analysis as utterly useless and ridiculous, unless capable of detecting 300 lbs. of guano in an acre of soil. I am not the advocate of either extreme. I do not believe in the extreme ammonia theory that Lawes and Pusey endeavored to establish by a series of seven years experiment—neither do I believe in the extreme mineral theory that they erroneously attributed to Liebig, but I do believe that the adaptation of a manure to certain crops can be predicted with great certainty when its composition is known, and I cite this California Guano as an illustration. It was applied by weight to plots far removed from each other, and the crop was weighed—including even the roots—then the straw and seed were each weighed separately and the plots of soil were analyzed both before and after the application of the manure. The results were never published, because I was informed that "the supply of California Guano was exhausted," but recently I heard that "another cargo was expected," and if the matter is of sufficient interest, I will copy them out of my note book for the next number of the *Farmer*.

DAVID STEWART, M. D.,
Professor of Agricultural Chemistry,
St. John's College, Annapolis, Md.
MARCH 19th, 1860.

Drilling Wheat—Distance of Drills.

To the Editor of the American Farmer:

Your editorial remarks in the last Farmer, in reference to my private note to you, make it appear that I doubt whether maximum crops of wheat can be grown in drills as far apart as nine inches—whereas my cursory allusions to the subject was intended to suggest, that the yield of the crop of which had I sent you a report for publication, would probably dispel such doubts from the minds of others, (and I believe there are many,) who entertain them *

My observations for the last nine or ten years have convinced me, that for extensive wheat growing, in latitudes where wheat receives very little protection from snow, and is subjected to frequent and rapid alternations of rain and snow, freezing and thawing, drills should not be nearer than nine inches, and for the following reasons:

From past experience it appears that the period for successful wheat sowing is very short, not usually exceeding a week or ten days between the danger of autumn attack of Hessian fly, in the early sown, and the almost infallible inferiority of late sown wheat, and therefore, when the

* We are pleased to have Mr. G's correction of this point, and his views upon a matter in which there is some difference of opinion.—ED.

season arrives, it is of paramount importance to progress with the work as rapidly as possible; and it is obvious, that with a given number of tubes, a nine inch drill will drill more ground in a given time than will a narrower drill, say an eight inch, by a difference that is valuable in drilling a larger crop. I deem this a matter of so much importance that I would now prefer to use a drill with eleven tubes nine inches apart, drawn by three horses a-breast. I think that such an improvement would drill twenty acres in a day, because with a nine tube drill, the hands eating in the field, and using a change of horses, so as to loose as little time as possible at dinner, I have drilled sixteen acres in a day. Such a drill would work very admirably in narrow ridge culture, because the horses would walk in the furrows, drilling very accurately, two ridges, each four feet one inch and a-half wide, at a time. I do not think that such a drill would be too heavy for a good team on level land.

Drilled wheat appears to grow into peculiar vigor, and to escape destruction from frost, because of its position in a trench; and if the trench fills up too rapidly, and becomes nearly or quite filled before the spring, the wheat not only losses the benefit of such position at a very critical season, but if the filling up commences and progresses rapidly from heavy rains and early frosts upon very young wheat, it receives an injury by being prematurely buried too deep, from which it never entirely recovers.

The preservation of the trench is not less important to the success of the grass crop, for the grass seed washes into the trenches where it gradually receives an adequate covering of earth, and where it is better shaded by the stubble after harvest, from both of which causes it is less liable to die in the summer draughts.

Now it is obvious that the sides of the trenches formed by a seven-and-a-half or eight inch drill, are steeper, and will therefore fill up faster than those formed by a nine inch drill—of which fact, and of evils resulting to the closer drill, such as above described, I have seen repeated examples.

M. T. GOLDSBORROUGH.

Ellenborro' March 17, 1860.

SANDED COTTON.—A correspondent of the *Mobile Advertiser* says: There has of late been much said about sanded and fraudulent packed cotton. And I am fully persuaded that, so far as the fraudulent accusation goes, it is almost, if not entirely, without foundation. I am induced to this conclusion from an accidental discovery, made but a short time since. I commenced packing early in the morning; it was thick, foggy and misty. One of my sons went into the cotton box with his hat (a cassimere hat) on, which was damp; when he came out he called my attention to the fact that his hat was covered, literally covered, with very fine sand, resembling fine sand paper. This cotton was picked early, and was, to all appearances, clean and fine. It surprised me very much, and it at once convinced me that the sanded cotton is not a fraud, but a necessity, from the soil upon which it is produced.

General Washington was a farmer, and he was not ashamed of his business.

Select List of Grapes.

A correspondent, whose experience entitles his opinion to respect, furnishes the following list of Grapes, the merits of which are well ascertained, and all of which, in his opinion, are better than Isabella and Catawba:

1st. DELAWARE.—Bunches and berries medium size, round, red; ripens four weeks earlier than the Isabella; of the highest excellence as to quality, hardiness and productiveness. Its right eminently to the first rank is generally conceded by all who know it.

2d. DIANA.—Bunches large, mostly shouldered; berries large, round, red; vine vigorous and productive; ripens two weeks later than the Delaware and approaches it in excellence, both for table use and for wine. If grown in a small space, must be root-pruned at the end of the first season, and, if very vigorous, at the end of the second.

3d. ANNA.—A white grape of the highest flavor; bunches and berries medium to large; vine hardy and productive. It begins to ripen as early as Diana, but does not progress so rapidly, and consequently in cold seasons may be considered not quite so early as Diana, but much earlier than Catawba, and greatly surpassing it in pure rich vinous flavor.

4th. HERBEMONT.—An immense grower, and the most ornamental of all our out-door vines; perfectly hardy South of New York; its berries are medium or small in size, but color deep purple covered with blue bloom; the bunches are very large. Its rich, spicy, vinous flavor is very distinct and of the greatest excellence. It is fitly described by Downing, who says, "its berries are bags of wine." An admirable variety for the latitude of New York city and further South. In texture and flavor it may stand in comparison with the best European varieties.

5th. LENOIR.—All that has been said of Herbemont will apply generally to this variety, except that the Lenoir is much earlier, ripening at least two weeks before the Isabella. Its fruit is very sweet, rich, spicy and vinous, and has a very high character for wine as well as for table use.

REBECCA would deserve all commendation for the garden, were it not that its leaves, which are not very abundant, like those of Isabella, in most localities are subject to mildew in unfavorable seasons.

There are two other varieties that should not be passed without a word, as few who have gardens would like to be without them.

1st. UNION VILLAGE—which originated with the Shakers at a place of that name near Cincinnati, Ohio, and was introduced by Mr. Longworth. In appearance it is like a monstrous Isabella and resembles it in flavor, but is richer, and ripens at least one week sooner. In bunch and berry it may be represented as twice the size of that variety.

2d. ELSINGBURG.—This is directly the reverse of the above, having small berries, but of the highest flavor and of a decided European character, but is hardy, early and productive; with care, its long shouldered bunches become very handsome; fruit sweet, spicy and delicious.

It may be remarked that the skin of the Herbemont, Lenoir and Elsingburg adhere firmly to the flesh like all of the foreign varieties.

Felspar as a Fertilizer.

HOWARD COUNTY, March 14, 1860.

To the Editor of the American Farmer:

In the report of our State Agricultural Chemist I find a solution of part of the queries I propounded to you in my letter of last month, in reference to the mineral, "felspar."

In Chapter XIX, page 68, Mr. Tyson, in illustrating the action of lime upon soils, remarks; "If we take, for example, felspar rich in silicates of potash and soda powdered extremely fine, we find that water, even with carbonic acid, will dissolve nothing out of it for a long period, and that boiling acids dissolve little of those silicates, even though continued for weeks." "When the powdered felspar is well mixed with lime and exposed to heat, silicates may be readily dissolved out of it by acids." "If the mixture is made as first above, and kept wet for some weeks, the same results are obtained, though in less amount." "A weighed quantity of soil or clay, say 1000 grs., may be placed upon a filter, and distilled water passed through until it has abstracted all the soluble matters." "If we mix what remains in the filter intimately with lime, and let it remain in a moist condition during some weeks, and again filter, we obtain an additional proportion of soluble matters, besides some of the lime used."

In the simple experiments above, Mr. Tyson has shown that the silicates can be dissolved out of the powdered felspar and clay and thus rendered available to the rootlets of plants.

Now, Mr. Tyson, in his analysis of various specimens of felspar, has shown that their constituents, consisting of silica, alumina, potash, soda, lime, oxide of iron and magnesia, exist in varying proportions—potash, the most important of all, ranging from a fraction of an unit up to 16.95 per cent. But he has not enumerated any of the combinations of *phosphoric acid* as a constituent of any of the specimens he examined, and yet phosphoric acid plays equally as important a part in the economy of nature as potash itself, as is fully proved by the fact that it constitutes by far the largest share of the ashes of plants. From whence, then, does the soil derive the large amount of phosphoric acid required for the support of animal and vegetable life? The sources of supply to which Mr. Tyson has alluded, namely, "the phosphate of lime, phosphate of iron," &c., are found but in certain localities, and could not possibly supply the general demand, and yet we find the phosphates in every fertile soil.

Mr. Tyson's theory, "that the decay of plants (including, of course, the original forests) left the phosphates and other minerals in and on the soil, and thus stored up the accumulations of thousands of years," is equally untenable, for it may be properly asked: from whence did the original plants and forests derive the phosphoric acid, so essential to their life and growth, unless from the ancient organized earth, provided ages before the first indications of organized life?—Their decay could but have returned to the earth what they had originally taken from it for their support, and thus it has continued throughout all the ages of the world with all beings that have existed. Phosphorous is an elementary substance; there is no evidence of its generation by living animals or beings of any kind. It is therefore highly desirable to find out its place amongst the original components of the earth. We have seen that potash, in the form of silicates, abound in the soil, and are to be found in greater or less abundance over all the earth, and afford a gradual and continuous supply of that essential constituent of plants. Analytical chemistry has demonstrated that it is derived from the disintegration of the ancient massive granite, as forming the basis of our present system of continents, and it is well known that felspar forms four-fifths, at least, of all ordinary granite. The question, then, may be repeated—from whence is the phosphoric acid derived?

In answer to this question it may be said, there are many circumstances to lead to the belief that it is derived from the same source as the potash; that it is in fact an original constituent of one or more granite minerals; crystallized phosphate of iron is not unfrequently found lining the side of small cavities in the granite rock; a massive variety is found on some occasions in farming districts; phosphate of lead is found in some of the Cornish mines; phosphate of alumina in a crystallized condition is met with in an ancient slate deposit—it is found in glassy felspar, in lava and in white porcelain clay, the result of the decomposition of granite rocks, and many other cases might be cited in evidence of the presence of phosphorous in the old crystalline igneous rocks. It may be true that the felspar of sound, unaltered granite give but indistinct traces of phosphoric acid, but it may be accounted for by the greater difficulty of the investigation, and a theory has been started that it exists in the "felspar" in union with alumina, a combination so much resembling pure earth, that unless the experimenter be much on his guard, he is likely to be led into error. Here, then, is room for further chemical researches, and as the hydro fluoric acid has been successfully used for the detection of the phosphoric acid in the *decomposed felspar*, it has been suggested that its use, with other acids diligently applied to the *powdered felspar*, may yet, in all probability, meet with success.

If, therefore, felspar contains silica, alumina, potash, soda, lime, oxide of iron and magnesia, (with the important addition of phosphate of alumina,) and these constituents can be rendered soluble, and thus available to the roots of plants, it certainly should constitute one of our best native fertilizers, for with the addition of sulphuric acid in the form of gypsum, it would contain all *the essential* inorganic constituents of plants.

By the preceding experiments of Mr. Tyson it has been seen that water, with carbonic acid, acting on the powdered felspar, will *gradually* dissolve out the silicates—and when the powdered felspar is intimately mixed with lime and exposed to heat, that effect will be more rapidly effected by means of acids. These facts being established, it is evident that if the felspar rock is crushed to a fine powder and sown broadcast over the land, the carbonic acid of the soil and the atmosphere, together with moisture, will *gradually* liberate the potash, &c. of the silicates, free by some peculiar process the phosphoric acid in the alumina, and thus afford their essential assistance to the growing plants. The same effects would result,

but much more promptly, if the powdered felspar is mixed intimately with lime exposed to heat and then sown or scattered over the land as above, the carbonic acid of the atmosphere, &c. would answer the same purpose as the acids employed by Mr. Tyson in his experiments. Hence it follows that on lands, which have been in a measure exhausted of their silicates and phosphates by a system of hard cropping, or injured by the excessive use of lime, and which are admitted to be the most difficult to reclaim, there would seem to be nothing more likely to restore them to their original condition than a return of the constituents of which they have been deprived—all of which are contained in the felspar.

That felspar (prepared by some process with which I am unacquainted) is used as a fertilizer in England, and greatly valued, there is no doubt. I have recently conversed with an intelligent Englishman on the subject, and he has informed me that the felspar rock readily sells there at the rate of £4 per ton; it is purchased by persons who prepare it as a fertilizer, and sell it under the name of "rock ash," of course at a considerable advance on the price paid for it—and I have recently seen in an English newspaper, viz: "The North Briton and Cornwall Advertiser" of the third of last month (February) the following advertisement, which I copy verbatim et literatim:

FELSPAR.

Persons having the above for sale, will hear of a purchaser by applying to Sam'l T. Tregaskins.
St. Issey—Bodmin.

This would seem to confirm the idea that the mineral was in demand in England, either to be prepared as a fertilizer, or, as in Scotland, to extract, by some peculiar process, the potash it contains as an article of trade.

In the more Southern sections of our own country the crushed granite (far less rich than the felspar) is used as a fertilizer, and in demand at the rate of $20 per ton.

Mr. Tyson says, in the preface to his report: "In addition to many obvious advantages, we shall find, if a work of this kind be thoroughly executed, that the wants of our soil can generally be supplied with much less dependence upon manures or fertilizers from abroad than has hitherto been supposed"—and I fully agree in his view and hope that he will thoroughly analyze the felspar, and prove—what there is so much reason to believe—that it actually contains some of the combinations of phosphoric acid in its composition, and thus introduce a cheap and valuable fertilizer to the agricultural community.

Very respectfully, R. D. H

We regret that for want of space, we must omit the portion of our correspondent's interesting communication, which refers to indication of the existence of valuable copper mines in his immediate neighborhood.—Ed.

THE FRUIT.—We are pleased to find that the destruction of the Peaches has not been so general as was at first supposed.

Interesting Lecture on Insects.

Dr. Asa Fitch, of New York, delivered two interesting lectures, recently, at New Haven, Conn., on "Economical Entomology," or injurious insects, a synopsis of which is furnished by a correspondent of an Eastern paper. The subject is one of general interest:

REPORT OF FIRST LECTURE.

Dr. Fitch labors in a field of science vastly important to farmers, but very poorly understood. As he very justly remarked last evening, the devastations by insects are not noticed, because so insidiously made, but if our eyes could but be opened to the activity of our little foes consternation would seize us. Go into our forests and we see every portion of our trees attacked by some insect, trunk, bark, leaves and roots, all having their peculiar depredators. The sweeping away of our forests compels the insects which formerly fed upon them to turn to the orchards, which have replaced the forests. We shall, before many years, see our apple-tree branches lopped off, as are the limbs of the common red oak, and by the same insects, the "oak pruner."

Foreign insects have been imported in the thousand commodities, and the numberless trees and plants which we import, and these have proved the most pernicious foes to our crops and trees. Our crops and climate favoring their development, they multiply to a frightful extent, and do far greater damage here than they did in Europe. The bark louse, for instance, on both sides of Lake Michigan, has ruined nearly every orchard. For years after the settlement of this country, wheat was an absolutely sure crop, but the yield dwindled with successive years, and now in large districts, its culture is necessarily abandoned. Reasons have been urged to account for this; that our soil has deteriorated, and our climate changed, but they do not explain the difficulty. With the best of manuring and tillage, we cannot get the crops our ancestors did, with shiftless farming; and even where new woodland is cleared, and wheat is put into the virgin soil, the crop is infinitesimally small. The true cause is to be found in the attacks of insects, and nothing else. Starting some years ago, with the popular belief that the wheat midge and Hessian fly were the greatest wheat enemies, the learned lecturer had been surprised to discover, that in every field he examined, a host of European insects, new to this country, were flourishing. There were, especially notable, the chlorops, oscinis and thripe, beside others. In the old forest days there was no wheat nor any of its congeners; and so, when they were first sown, no enemies attacked it; but by degrees, one after another finding abundant nutriment in the wheat fields, sought it there, as the trees were cut away. The wheat midge came from England, and has ravaged our fields for twenty-five years. It is a miserable little yellow fly, scarcely one-fourth as large as a mosquito, but deadly enough to cause in New York State, in 1854, a total loss of over $15,000,000, or nearly as much as the whole city of New Haven is worth, with all its houses, buildings and lots. If an invading army had destroyed property to this value, how the whole country would have been aroused! Multi-

ply this tremendous loss by that felt in all the States, and what a result is there for our contemplation. The wheat midge, however, is, and to say, not our only insect enemy, for the name of the army is legion; and yet, there are but two books on insects published in America, and these are not on sale in our bookstores. One of them is Dr. Harris's treatise, which was part of the survey of the natural history of Massachusetts; and the other Dr. Fitch's own report on noxious insects, published in the New York State Agricultural Society's Transactions. The insect is divided into three parts, viz: head, thorax or fore-body, and abdomen. The head is furnished with antennæ or horns, which possess remarkable sensitiveness. Thus, an ichneumon fly, by touching them against the outer surface of a bark in which, at even the depth of two or three inches, a worm is buried, knows if it is his food, and just where it is lodged; and two bees, by touching their horns together, know if they come from the same hive and are brothers, for all the world as if there were a system of Freemasonry among them. The most wonderful thing about insects is their metamorphosis from one condition to another so different that one might as well expect a serpent to change to an eagle. The insect life is divided into four stages—first, the egg; second, the larva; third, the pupa; fourth, the perfect insect. An insect may be known to have matured when it has wings; or if it be a wingless variety, its maturity is known by its depositing eggs. Grasshoppers and plant-leaf bugs are an exception to the four staged life, for they grow from larva directly into full-grown insects. Insects have, however, much we may despise them, a real use in creation. They keep down the excess of vegetation, and without such provision of nature, the world would be immediately overrun with plant life. Dr. Fitch closed by stating that by a careful scrutiny of the whole history and transformation of noxious insects, we are sure to find a vulnerable point by attacking which we may destroy them. Although Achilles was covered with an aegis, he was found vulnerable in the heel.

REPORT OF THE SECOND LECTURE.

He said that our losses are immeasureably greater from insects than those of the European nations; and yet, because of not being so overcrowded in population, they were not felt so much; for there the loss of one-eighth of a crop would be regarded as a great national disaster. The Hessian fly was introduced into this country in some packing straw by Hessian soldiers who landed at Flatbush, L. I., August, 1776. It did no great injury to crops thereabouts until 1779. Starting from that point, and travelling about twenty miles a year, it had overspread our whole country. Within a year or two of its arrival in any given place, most of the surrounding wheat field were destroyed, and its ravages usually continued for a few years, or until its parasitic enemies exterminated it. It has frequently reappeared here and there, but for the past few years has almost been unheard of. This fly is probably that referred to by Duhamel as having greatly injured the wheat in Switzerland in 1732, but during the half century of its worst ravages here it was almost unnoticed in Europe. In 1833 it ravaged a part of Germany, and in 1834 Prof. Dana found it along the Mediterranean in Spain, Italy, and on the Island of Minorca.

The wheat midge has been long known in England, and was imported thence. It was there originally thought to be a sort of mildew, but in 1771 its true nature was discovered, and in 1797 Mr. Kirby, searching for the Hessian fly, found and traced out the habits of this insect. It was first noticed in our country in Northern Vermont in 1820, but did no great injury there until nine years later, when it also began to extend itself over the Northern States, throughout Canada, and as far west as Indiana. There is a parasitic insect, the ichneumon fly, which in Europe checks the spread of the midge, but has not yet been brought over here. There are two ways in which the wheat midge may be destroyed in large numbers, viz: 1. By killing the fly itself; and 2, by destroying it when but yet a larva. If infested wheat fields are swept over for several successive evenings with a proper net, myriads may be caught, and a good part of the wheat crop be saved. The larva deposited in the kernals of grain are carried to the barn and resown in Spring to fulfill their pernicious mission. Now if a district is greatly infected the fields should be plowed very deeply in Spring, burying crop, worms and all, so as to prevent the reappearance of the insects; and especially careful should farmers be to destroy the screenings from their threshing machine and fanning-mill, or at any rate, feed them to chickens, that the millions of larva of the midge contained in the heap may not be restored to the fields. They have a wonderful tenacity of life, these little rascals. Dr. Fitch has tried to drown them by keeping them three months under water, but to no avail.

The audience being invited to ask questions on the subject of the lecture, if so disposed, availed themselves of the permission. Dr. Fitch, in answer to sundry queries, said that neither sowing lime on wheat when the dew was on, nor sowing salt, nor using sulphur or salt in the granery, nor tobacco water sprinkled on the field, were specifics. If New York loses fifteen millions of dollars a year from the wheat midge, why wouldn't it be a good investment to send Dr. Fitch to Europe to procure the great foe of the midge, the ichneumon fly? This latter insect sweeps the other from the very face of the earth; and a half-bushel of its eggs, hatched on Dr. Fitch's place, would be worth its weight in diamonds "of purest ray serene."

DEPTH FOR PLANTING POTATOES.—T. M. Carr, of Lafayette, Ind., relates, in the *Ohio Cultivator*, an experiment on this subject. He was stopping with a friend, whom he found planting potatoes, covering lightly, say two or three inches deep, and advised deeper covering. His friend thought not, but allowed him to cover a row his own way. He picked out the largest potatoes (his friend had them cut up quite fine) and dropped a row, covering six or eight inches deep. This row did not come up as soon as the rest, but when the plants did come, their superiority was manifest as far as you could see them, and they kept ahead through the season, and at digging time told the whole story, yielding two or three times as much as any other row.

A Good Thing Revived—Spaced Floors for Stock.

Mr. Mechi, of Tiptree Hall, England, who occupies the position of a farmer on modern principles, and may be said to personify the spirit of recent improvements in English agriculture, has improved, or at any rate altered the plan of making floors for stock with spaces, which allow all the droppings of animals to fall through upon peat, muck, chaff, tan bark, vegetable mould, or other absorbing substances placed in a vault constructed for the purpose beneath the floor. The invention of this plan is ascribed by Mr. M. to Mr. Clergyman Huxtable, and described by the latter in a paper, recorded in the Journal R. A. S., Vol. VI., p. 242, as the "boarded floor" plan. As this name does not indicate the peculiarity nor any peculiarity of the plan, it may well be asked "what's in a name?" and answered, "sometimes expression and fitness, and sometimes neither one nor the other." *Spaces* or *intervals* between strips of varying dimensions, according to the weight of the animals and the size of their feet, being the peculiar novelty of the plan, I propose to call such floors "spaced floors," subject to be rejected for a better name.

Though Mr. Huxtable may not be aware of the fact, it is an error of Farmer Mechi's to suppose this plan was not in use before his time; for a friend of ours repeatedly saw it in use in the west of England, thirty-five years ago, and has no doubt of its having been known at least thirty years before that time. It was made of strips of about two inches square, with one and one-half inches space, and elevated one to two feet above the ground level.—It was used for fattening calves, which were thus put upon a "stage," as it was termed, to keep them *dry*, a difficult matter on a level ground floor, and calves thus situated, with good treatment otherwise, were found to to fatten much more rapidly than upon a ground floor, where they wet their bed too often for their comfort or thrift. I have seen the same principle adopted by farmers in Wisconsin, and it is probably done in other places at the West, in the construction of floors for fattening hogs. The material in this case is six inch fencing, laid flat, with 1¼ inch spaces, the floor being raised two feet or thereabout from the level of the ground. By this means, and the occasional use of a hoe, the hogs were kept dry and clean at a trifling cost of time and attention, while they kept one another warm by huddling together.

The plan of Mr. Mechi, or so much of it as is practicable here, is to have a vault under the floor large enough to contain all the droppings and the absorbing substance necessary from the time cattle or other stock are put in, till it is practicable to draw the manure direct to the field for immediate use—above the vault he constructs floors with 3x4 inch bars, and 1⅞ inch spaces for cattle; 2x3 and 1⅝ inch spaces for calves; grown sheep and hogs, 1½x3, and 1¼ inch spaces; and a fifth less width in spaces for young lambs and pigs. The strips are laid lengthwise of the animal as he stands to feed. The solid pieces might be narrowed one way, and remain of the same depth, not only without weakening the floor, but manifestly increasing its strength; but in any modification of the solid parts, the spaces must not be made much, if any, narrower than stated. Well seasoned hard wood would, of course, be more durable and stiffer for the bars than hemlock or pine, but it must be thoroughly well seasoned, to preclude warping and its resulting inconveniences.

W. R. Forster, in the Country Gentleman, Jan. 5th, says, he thinks the vaults should be four feet deep to contain all the manure accumulating in our long winters. It appears that so great a depth would be inconvenient for removing the manure, and we generally have a week or ten days in January mild enough to admit of at least a part being taken out at that time. But if we admit that a total depth of 3½ or 4 feet, then I suggest that it would be better to raise the floor 12 to 18 inches above the ground. This would secure an easily accessible position of about half the winter's accumulation. To facilitate the removal of the manure, a plank might be left loose under the sill, so as to be easily removed when occasion requires.

The spaced part of the floor need not extend more than four or five feet from the back end for bullocks or cows, leaving close floor for their fore-feet. But for smaller animals the spaces would be needed the whole length of the floor, since they occupy any position.

In sheds or stables that have no partitions the bars might be crosswise of the position of the ox or cow while feeding, which arrangement would admit of narrower timber being used, as the hoofs are twice as long as they are broad. But in all cases where boxes or stalls are used, the spaces should be parallel to the partitions, for convenience in cleaning. For when the spaces run as I have described, the attendant can stand behind and clean the floor effectually with a hoe without even turning the animal out.

In this climate, there may be instances when the droppings will freeze, or otherwise adhere to the bars. It would be convenient, therefore, to have a double hoe or scraper, having a wide part to clean the top, and a narrow tongue to pass between the bars.

No litter whatever is required on spaced floors, for this would rather tend to keep them damp than dry, thus defeating the main object of the plan. If horizontal currents of air under the floor are shut out, there is no reason why animals should be cold when not littered: for the heat comes from the body, not from the bedding, and certainly no cold air will rise through the spaces, if cold air from without this building is not admitted. Heat always rises, unless forced down by currents of air, therefore, the heat constantly escaping from the under part of the animal when lying down, will rise up their sides, warming them as it ascends. Mr. Mechi economizes this constantly emitted animal heat, and thus saves fodder. He puts two oxen or cows in the same box, knowing full well that by their constantly escaping heat they will keep each other warm, as most of us have done when boys, and as we may see in pigs "huddled all together" to keep warm.

I cannot agree with Mr. Forster when he remarks that "too much has been said about the comfort and warmth of bedding under animals, but must admit that far too little has been thought about it, and that little not correctly." He thinks that this plan, by dispensing with all

litter will enable farmers to winter fifty per cent. more stock. This estimate is too high, because much of the material used for litter would not in any event be eaten by the animals. But I think that twenty-five per cent. more stock can be wintered well—this plan of flooring and the saving of feed incidental to its use; and if one-fourth more animals can be wintered they can be effectively *summer* fed by resorting more or less to soiling, as an auxiliary to that end, and this will probably be done.

A few of the advantages of spaced floors may here be stated in connection. 1st, One-fourth more stock may be wintered on a given quantity of farm produce. 2d, Forty to fifty per cent. more of *effective* manure may be made from the same quantity of feed, with a fourth more animals. 3d, A great saving in the labor of cleaning of stalls is effected, and more animals can be attended to at the same cost and in a given time. 4th, The increased amount of manure, being judiciously applied, twenty-five per cent more produce, or thereabouts, will be raised. 5th, In conclusion the advantages already named will be equivalent to either an increase of land or of working capital, after the plan is fully in operation, to the extent of perhaps twenty per cent. For such, among numerous reasons, I may be allowed to suggest that the plan of spaced floors is worthy of extensive consideration and full trial.—*Stock Journal.*

[For the American Farmer.]

Curious Birds—Honey Guide.

Olive green above; yellow beneath; rump and tail coverts white; upper wing coverts white, varied with olive; the fore part of the neck and breast are paler yellow, and the middle of the neck is varied with black spots, which ascend to the throat; inhabits the interior of Africa, at a considerable distance from the Cape of Good Hope. This bird is very fond of honey and bees, but being unable, by its own efforts, to procure them from the hollows of trees, it points out to man and to the animal called *ratel*, the nests of wild bees. The morning and the evening are its principal meal times, or at least it is then that it shows the greatest inclination to come forth, and with a grunting of *cherr, cherr, cherr*, to excite the attention of the ratel, as well as the Indian, who is compelled to study the manners of birds he pursues in the chase, the haunts which they frequent, the seasons of the year in which they are most abundant, or best suited to his purpose. Some one then generally repairs to the place whence the sound proceeds, when the bird, continually repeating its cry, flies on slowly, and by degrees, to the quarter where the bees have taken up their abode. The persons thus invited follow accordingly, taking great care, at the same time, not to frighten their guide by any unusual noise, but rather to answer it, now and then, by a soft gentle whistle, by way of letting the bird know that its call is attended to. When the bees nests are at some distance, the bird often makes long stages of flights, waiting for its sporting companions between each movement, and calling to them again to come on, but flies to shorter distances, and repeats its cry more frequently and with greater earnestness in proportion as it approaches the nest. When the bird has sometimes, in consequence of its impatience, got too far ahead of its attendants, but particularly when, on account of the unevenness of the ground, they have not been able to keep pace with it, it will fly back to meet them, and with redoubled cries, seems to chide their tardiness. When it arrives at the nest (whether the latter is placed in the cleft of a rock or in a hollow tree) it hovers over the spot for a few seconds, then sits in silence and for the most part concealed in some tree in expectation of the result, and with a view of receiving its share of the booty. Nor is it disappointed—for the hunters, in reward for its services, leave it a large part of the comb. Levaillant mentions that the Hottentots are very partial to the Guide on account of its good offices, and that once, when he was on the point of shooting one, they entreated him to spare its life.

J. JACOB BOWER.

The London Times on Cotton.

In a late article on Lord Brougham's recent anti-American cotton and anti-American slavery speech, in Parliament, the London *Times*, in the following pithy and comprehensive style, takes the backbone all out of Lord Brougham's argument, and leaves him nothing but his sophistries to stand on:

"Lord Brougham and the veterans of the old anti-Slavery Society, do not share our delight at this great increase in the employment of our home population. Their minds are still seared by those horrible stories which were burnt in upon them in their youth, when England was not only a slave-owning, but even a slave-trading State. Their remorse is so great, that the ghost of a black man is always before them. They are benevolent and excellent people; but if a black man happened to have broken his shin, and a white man were in danger of drowning, we much fear that a real anti-Slavery zealot would bind up the black man's leg before he would draw the white man out of the water. It is not an inconsistency, therefore, that while we see only cause of congratulation in this wonderful increase of trade, Lord Brougham sees in it the exaggeration of an evil he never ceases to deplore. We, and such as we, who are contented to look upon society as Providence allows it to exist—to mend it when we can, but not to distress ourselves immoderately for evils which are not of our creation—we see only the free and intelligent English families who thrive upon the wages which these cotton bales produce. Lord Brougham sees only the black laborers who, on the other side of the Atlantic, pick the cotton pods in slavery. Lord Brougham deplores that in this tremendous importation of a thousand millions of pounds of cotton, the lion's share of the profits goes to the United States, and has been produced by slave labor. Instead of twenty-three millions, the United States now send us eight hundred and thirty millions, and this is all cultivated by slaves. It is very sad that this should be so, but we do not see our way to a remedy. There seems to be rather a chance of its becoming worse. If France, who is already moving onwards in a restless, purblind state, should open her eyes wide, should

give herself fair play by accepting our coals, iron and machinery, and, under the stimulous of a wholesome competition, should take to manufacturing upon a large scale, then these three millions will not be enough. France will be competing with us in the foreign cotton markets, stimulating still further the produce of Georgia and South Carolina. The jump which the consumption of cotton in England has just made, is but a single leap, which may be repeated indefinitely. There are a thousand millions of mankind upon the globe, all of whom can be most comfortably clad in cotton. Every year new tribes and new nations are added to the category of cotton-wearers. There is every reason to believe that the supply of this universal necessity will for many years yet to come fail to keep pace with the demand, and in the interest of that large class of our countrymen to whom cotton is bread, we must continue to hope that the United States will be able to supply us in years to come with twice as much as we bought of them in years past. 'Let us raise up another market,' say the anti-slavery people. So say we all. * * But even Lord Brougham would not ask us to believe that there is any proximate hope that the free cotton raised in Africa will, within any reasonable time, drive out of culture the slave-grown cotton of America. If this be so, of what use can it be to make irritating speeches in the House of Lords against a state of things by which we are content to profit? Lord Brougham and Lord Grey are not men of such illogical minds as to be incapable of understanding that it is the demand of the English manufacturers which stimulates the produce of slave-grown American cotton. They are neither of them, we apprehend, so reckless or so wicked as to wish to close our factories and throw some two millions of our manufacturing population out of bread, Why, then, these inconsistent and these irritating denunciations? Let us create new fields of produce if we can; but, meanwhile, it is neither just nor dignified to buy the raw material from the Americans, and to revile them for producing it."

This article is worth considering, not only by Lord Brougham, but by men of his way of thinking and sentimentalizing in the United States. The supremacy of cotton is a fixed fact, and the present enormous demand for it is likely to increase rather than decrease. The fanatics of the free States will not be permitted by the civilized world to molest the labor upon which the supply of a product essential to the wants of millions of the human family depends.

Draining.

T. B. MINER, Esq.—*Dear Sir:* In your paper of the 7th inst. I notice an article from "M." on draining. His plan of using coarse gravel to fill his ditches, or half fill them, won't answer his purpose, unless it is on what I call damp land, wherein there is little water to run; but even there, all the damp land I have seen is nearly level, and when thaws occur in winter, and frosts come immediately after, the water has not had time to drain off through the gravel, and the frost heaves out the wheat as much as if no drains were there. If much water draws into these gravel drains, it cannot get away fast enough, consequently it rises to the surface, and overflows the land; and I know a man cannot feel very pleasantly, when he has made drains, and they don't work right. I, at first, did not put large enough tile in my main drains, and I know how to feel for those who don't make them perfect at first. I have seen gravel drains over fifty years ago; but they were very imperfect, besides they are very costly. A load of gravel won't do a rod of ditch. With a large wagon box and good roads, I have brought 100 rods of 2 inch tile at one load, and the 100 rods of tile costing $10.80; therefore "M." may see the tile is by far cheaper than anything; and as to the durability of the tile, I think he need give himself no concern. I have had them in the ground here for over 11 years, and apparently as efficient as they ever were. I took up some 30 or 40 rods, the first one I ever laid, which had been laid over 13 years, and excepting what few were broken by the spades of the workmen, they were all put back in their old places; and when taken out I could not have told, from their appearance, that they had been over a week in the ground. Tell "M." from me, if he is going to drain, to go at it with tile at once, and if he has not tile-works near him, let him aid in having a manufactory erected forthwith. Wherever tiles are manufactured, the farmers use all that can be made. Twenty-two years ago, Mr. Whartenby (now gone to his long home) made what I used, moulding them by hand, over a piece of wood; now we have seven if not eight tile-works within six miles of where I write, and some of the machines are worked by hand, some by horse power, and some by steam; and still I know they cannot supply the demand. Draining, where the soil is good, will pay almost any expense, and tile makers are all making money where they attend to their business.—True, it costs some ten or eleven hundred dollars, I believe, to erect works for doing a pretty good business, but where they make from 400,000 to 500,000 in a season, it soon pays the cost.

Yours, JOHN JOHNSTON.

Near Geneva, N. Y., Jan. 17, 1860.

REMARKS.—Here we have what may be considered the best authority on tile draining. Mr. Johnston has more experience, probably, in this branch of business, than any other man in the United States.

In the *Boston Cultivator* we notice that Mr. Johnston furnishes some excellent hints as follows:

MESSRS. EDITORS: In your paper of December 24th I notice the following in regard to my mode of draining:

"It will be observed that Mr. Johnston's lateral drains are two and a half feet deep and his mains three and a half to four feet. As much has latterly been said about the necessity of having all drains four feet deep, and as it has been more than intimated in a late work on drainage, that Mr. J., with all his experience, is still in great error, in this matter, it would be interesting to know from him, whether he has seen or heard anything which would change his plans in commencing new operations. In other words, taking expense and all circumstances into consideration, would he now drain his land four feet deep, or what depth would he prefer?"

In answer to the above I would state, that I

see no use in going deeper than a bottom impervious to water. It is important to get so deep that the water does not rise from the bottom of the ditch, whether it is two and a half or five feet deep. At the latter depth, drains might in some cases be double the distance apart that they would require to be at two and a half feet deep, because wherever I have seen a hard bottom four or five feet deep, the subsoil is quite porous, and and consequently the water *draws* more readily through a compact or stiff subsoil.

If I were now to commence draining another farm of the same character of subsoil as this, I should *make no variation as to depth*. The only errors I made, were putting too many drains in my low, alluvial soils—as they are only wet from the rising ground; and putting three-inch tiles in my lateral drains, where two-inch would have been sufficient, as they are in almost all cases. At first, I could not help this, as there were no tiles made smaller than three-inch, but I continued to use this size longer than I needed to have done.

I was convinced that drainage, with me, would *pay* at almost any cost, and I went on laying out my drains, digging outlets, &c., as if the labor cost nothing, aiming to make perfect work as I went along. True, I had to splice in some more drains in my upland, where I commenced, but that was only a small part of my draining. I have tile drains which have been running for more than twenty-one years, that are as efficient now as they ever were. I consider my farm perfectly drained, except two spots, where I could, perhaps, splice in some eighty or a hundred rods, that might pay.

I read all I could about draining, both before and after I commenced. Some of the advice of books was nonsense. For instance, one recommended covering the tiles with straw, shavings, or something of that kind. For the first 200 or 300 rods, I carted straw to the field and put it over the tiles. But practice and common sense soon taught me better. Any man of common knowledge who once commences underdraining, if he feels an interest in it, (and if he does not he need never commence,) will in a short time know far more than he can learn from any book I ever saw on the subject. I have laid thousands of tiles, plowed in the earth for many thousand rods, and while I was doing the work, I kept my mind on it, from beginning to end. Others may be equally successful by applying themselves thoughtfully to the business.—*Rural American.*

Culture of Broom Corn.

Eds. Rural New-Yorker: In your issue of January 7th, I notice an inquiry in regard to the culture and value of broom corn. Not seeing any answer from our celebrated broom raisers, I will answer to the best of my ability, premising that, although not in that business, I am somewhat familiar with it in all its details.

In the first place, the ground should be dry and rich; the same conditions of soil being required as for Indian corn. After the ground is plowed and *thoroughly pulverized*, it must be marked out in rows, three feet apart one way, and eighteen inches the other. The rows should be perfectly straight, if possible, as this will enable the most of the cultivation to be done with a horse. Plant at the season for planting maize, dropping from six to eight kernels in a hill, and cover about one inch deep.

As soon as it appears above the ground, put on a handful of ashes, or ashes and plaister, mixed, if the ground is not rich enough without such top-dressing. In about one week, the horse and cultivator can be started, and the first hoeing performed. Great care is required to do this well—if the ground is weedy, it is hard to distinguish the broom corn from "pigeon grass," "barn grass," and similar coarse weeds—if the weeds are left, the corn gets stunted, and never will recuperate. The corn should be thinned, when hoed the second time, to five stalks in the hill, and the cultivator should be busily employed, to keep the ground mellow and free from weeds.

After the seed is, say one-half out of the milk, the corn may be tabled and cut. The tabling is performed by walking between two rows, and bending or breaking the hills in each row, alternately, toward and across the other row, behind the table; or, as some do it, go backward between the rows, breaking the hills down, alternately, as before, across each other, at an angle with the row, of 45 degrees. The tops will then usually reach over the table about far enough to cut easily. The tables should be 16 or 18 inches high, in order that the cutter may not be obliged to stoop too much at his work. A shoemaker's broad, thin knife, is the best to cut with. The cutting is performed by taking hold of the brush, or tops, and cutting the stalk about eight inches from the brush. It requires much skill and practice to cut rapidly and easily. The brush should be left for a few days on the tables, to dry thoroughly—it is then bound in bundles and housed. The seed can be scraped off at any time, when convenient. Good seed is worth, for feeding purposes, about the same as oats. Good seed, well ripened, and fit for planting, is worth here, usually, $4 per bushel. The average worth of brush here, is about $150 per tun. Brooms, from such brush, sell here, *if well made*, for $2.25 for second quality, and $3 for the first quality.

I do not know the exact cost of raising, but it is just about double the work that it is to raise maize. The average crop per acre, on good land, is 1000 pounds. Rich, *well-cultivated* land, will give 1500 pounds per acre. The crop is under the control of the cultivator as much as is Indian corn, and *good* farmers will always get good crops. The best fertilizer is good barn-yard manure—to be applied as for Indian corn. The stalks are usually plowed under for manure; but some few take pains to pull the fodder, as used to be the custom in the southwest. Probably the best way to do this is to let the cows into the field, for an hour each day, after the brush is harvested, and let them pull their own fodder. It is equal to the famed sorghum, or to "sowed corn," for the purpose of increasing the yield of milk, as long as it lasts.

D. A. A. Nichols.

Westfield, N. York, 1860.

God never sends an angel to afflict a human soul but when another follows in its footsteps to heal and to bless.

Wholesale Produce Market.

Prepared for the American Farmer by ELLICOTT & HEWES, *Produce and Commission Merchants, 59 Exchange Place.*

BALTIMORE, March 24, 1860.

BUTTER.—Ohio, in brls. and kegs, 11 to 12½; Virginia and Pennsylvania, in kegs, 12 to 18; Glades 14 to 20; New York or Goshen 18 to 25; Roll 14 to 20.

BEESWAX—37 cts.

CHEESE.—Eastern 12½, Western 11½.

DRIED FRUIT.—Apples $1.40, Unpeeled Peaches $2.50 to $3; Peeled do. $5.

EGGS—In barrels, 13 cents per dozen.

FEATHERS—45 cents.

HONEY.—In the comb, 14 cents per pound.

LARD.—Brls. 11½, kegs 12½, jars and other country packages, 12 to 12½.

TALLOW—11 cents.

WOOL.—Unwashed 26, tub washed 35 to 38, pulled 31, fleece 46.

Baltimore Markets, March 24.

COTTON.—The demand is limited—sales have been made within past few days at our quotations, viz:

Grades..	*Upland.*	*Gulf.*	*Western.*
Middling.....	11¼a11¾	12a12¼	11¼a11¾
Good Middling.	12a12¼	12¼a12¾	12a12¼
Middling Fair.	12¾a12¾	13a13¼	12¾a12¾

FISH.—There is a good retail demand, but no cargo sales are being made. We quote prices as follows: Mackerel, $5 to $6 for small No. 3; $10.50 to $11 for large do.; $14 to $15 for No. 2; $16.50 to $17 for No. 1. Alewives, $3.75 to $4.25. Herrings, $3 to $4 for Halifax, and $4.25 to $5 per bbl. for Labrador.

FLOUR.—We quote Howard street Super, $5.75a$5.87½: Extra, $6.50. Ohio Super, $5.75a$5.87½; Extra, $6.50. City Mills Super, $5.75; Extra, $7.00. Family Flour, $7a$7.50 for the different brands; very choice brands, $8.

Rye Flour and Corn Meal.—We quote Rye Flour at $4.37½. Corn Meal at $3.62½ per bbl.

GRAIN.—*Wheat.*—Red, $1.37 to $1.45 for fair to prime. White, $1.55 to $1.65, according to quality.

Corn.—We quote white at 69 to 70; yellow 71 to 73 cts.

Oats.—Maryland and Virginia, 41 to 43; Pennsylvania, 45 to 48 cents.

Rye.—Maryland and Virginia, 90; Pennsylvania, 94 to 96 cents.

Mill Feed.—Brown stuff, 23 to 25; middlings, 35 to 38 cents per bushel.

POTATOES are selling, from the wharf, at 60 to 75 cents per bus., in small lots.

PEAS AND BEANS.—Black-eyed Peas, $2.75 to $3 per two bus. bag. Beans, 90 cents to $1.25 per bus., as in quality.

PROVISIONS—*Bacon.*—Shoulders, at 8, and Sides at 10 cents per lb.

Bulk Meat.—Shoulders 7; Sides 9 cents per lb.

Pork.—Mess, $18 to $18.50; Prime, $15. Rump, $14.

SEEDS.—Clover seed, $4.50 to $5.00. Timothy, $3.50 to $4. Flax seed, $1.30 to $1.40 per bus.

TOBACCO.—An improved demand has been apparent for Maryland Tobacco, and sales have been readily effected of all the receipts of new crop as fast as inspected. For the old crop there is no inquiry. We still quote frosted Maryland at $2; ground leaf at $3 to $7; common at $2.50 to $3.50; middling, $4 to $4.50; good middling, $5 to $5.50; good leaf, $6 to $6.50; and fine at $7 to $12. The market for Ohio Tobacco has not yet opened, there being no demand for it, and we are as yet unable to give any quotations. Kentucky Tobacco of the new crop is coming forward quite freely, and proves to be far superior in quality to that of the preceding year. We, however, have no transactions to note, and continue former quotations, viz: common lugs at $4.25 to $4.75; good do. at $5.25 to $5.50; inferior leaf at $5.75 to $6.25; good do. at $6.50 to $7.50; fine at $7.50 to $9; choice at $10 to $12; and rich heavy Kentucky at $7 to $12.50. The inspections of the past week are 531 hhds. Maryland, 400 hhds. Ohio, and 146 hhds. Kentucky—total 1,083 hhds.

SALT.—Turks Island, (except in cargo lots,) 20 cents per bushel.

GUANO AND OTHER FERTILIZERS.—Prices continue without change. We quote Peruvian at $61 to $62 per long ton, according to quantity—the latter being for a single ton and upwards. For less than a ton, at the rate of $56 per ton of 2000 lbs.; California or Elide Guano, $50 per long ton; Manipulated, $47; Super-Phosphate, $45; Mexican AA, $20 to $22; Mexican A, $16; White Mexican, finely ground, $27; Sombrero, $32 per long ton, and Colombian $40. Navassa Guano, finely ground, $25 per ton. Ground Bones, $25 to $27 per 2000 lbs.

GINSENG—60 to 65 cents per lb.

HIDES—Country slaughtered, 9 to 9½; dry do. 14 to 15 cents.

HOPS—Old, 7 to 8; new, 14 to 15 cents per lb.

HAY AND STRAW.—Hay, $16 to $18 for baled, and $13 to $15 per ton for loose. Straw, $13 to $14 for rye, and $10 to $12 per ton for wheat and oat.

CATTLE MARKET, March 22.—The receipts of Beef Cattle continue to decrease, and to-day the offerings at the scales were only 300 head against 600 head last week. The demand was fair and in consequence of the light supply prices were 25 to 50 cents per 100 lbs. higher than on last market day. Of the Cattle offered 75 head were sold to go to New York, and the remaining 225 head were taken by Baltimore butchers at prices ranging from $4.75 to $5.50, averaging $4.75 per 100 lbs. gross.

Hogs are in fair supply, and we quote them steady at $7.50 to $8.25 per 100 lbs. net, for ordinary to good lots.

Sheep have advanced again and we now quote them at $5 to $6 per 100 lbs. gross.

NEW ADVERTISEMENTS.

Baker, R. J.—Chemicals.
Bachelor, W. A.—Two Farms for sale.
Bates, Sullivan—Cranberry Plants.
Borum & M'Clean—Corn Planters.
Berry, N. E.—Agricultural Salt.
Brayley & Pitts—Pitts' Threshing Machine.
Bright, William—Book on Grape Culture.
Brush, W. M.—Agency Buckeye Reaper.
Carter, Sharpe—Jacks for sale.
Cottingham, C.—Dredging Machines.
Davis & Birney—Texas Cotton Lands.
Dingee & Co., W. W.—Threshing Machines.
Evans & Co., Edw. J.—Seed Potatoes.
Feast & Son, John—Florists, Grapes, &c.
Ficklin, S. W.—Improved Breeding Stock.
Farquharson, P. L.—Saddlery, &c.
Gregory, Jas. J. H.—Squash and Cabbage Seed.
Griffith, R. R.—Swan Island Guano.
Harris Joseph—Rural Annual.
Hooker & Co., H. E.—Strawberry Plants.
Lawton, William—Blackberry Plants.
Marshall, Edwin—Strawberry Plants, &c.
McDonald & Dugdale—Agents for Baugh's Phosphate.
Montgomery & Bro., J.—Rice Fan.
Merriam, Jos. P.—Grape Roots.
Patterson & Murguiondo—Esmaralda Guano.
Petersburg Fertilizing Co.—Manipulated Guano.
Piper, James L. Adm'r—Farm "Antrim."
Pitt, Thomas I.—Inspections of Guano.
Reese & Co., John S.—Manipulated Guano.
Sinclair & Co., R. Jr.—Stetson's Reaper and Mower.
Sinclair & Co., R. Jr.—Agricultural Implements.
Thorburn & Co., J. M.—Seeds, &c.
Turner, J. J. & F.—Turners "Excelsior," &c.
Warns, Clement—Chester Hogs.
Ware, James A.—Texas Lands.
Wheeler, Melick & Co.—N. Y. Agricultural Works.
Whitman & Co., E.—Lightning Rods, &c.
Zell & Son, Peter—Fertilizers.

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A Few Thoughts on Concentrated Fertilizers.

The subject of *concentrated fertilizers* is one of great importance to agriculture. Their use involves the outlay of vast sums of money—hence we submit a few thoughts, looking to economy, which may not be without interest to consumers of Guano. All fertilizers may be divided into two classes, namely, first: *Concentrated*, or those which require an application of from 100 to 300 lbs. per acre only, and, secondly, *Bulky*, or those which require an application of 600 to 1000 or more pounds per acre to produce a desirable effect. Of the former, *Phosphate of Lime* and *Ammonia* constitute the only elements of value—*this is an established fact*—hence the precise money value of any *concentrated fertilizer* may be easily determined, when it is known what quantity of these two substances it contains. The latter class, or *bulky fertilizers*, such as *Plaster*, *Salt*, (or chloride of sodium,) *Ashes*, &c., are valuable, but they cannot be considered valuable at the price of guano, say $45 or $50 per ton, because they have to be applied in very large quantities per acre, to produce any effect, while a very small application of a concentrated fertilizer, containing a *large* percentum of *Ammonia* and *Phosphate of Lime*, suffices to produce the desired result. If it were not so, the cost of these articles would preclude their use. Hence we say the value of *any concentrated fertilizer* depends entirely upon the quantity of these two substances it contains, because if it contain small quantities, it is less *concentrated* and requires larger applications per acre, at greater cost—hence it becomes the interest of farmers to look to this fact in purchasing supplies.

There is a very natural disposition on the part of all to, buy at the lowest price, and there is a corresponding disposition on the part of "fertilizer venders" to furnish low priced arficles, in order to make sales, but in the purchase of *concentrated* fertilizers, it is almost certain that the cheaper are the most costly. For example, a fertilizer at $45 per ton, requiring 400 to 600 lbs. per acre, is actually costing $90 per ton, when compared with an article which may be bought at $50 per ton, requiring only 200 to 300 lbs. per acre, besides the freights, &c. are just double in the former case.

The point to be looked at is the *amount of money* spent upon each acre, to produce given results. Thus, 600 lbs. per acre of a fertilizer costing $45 per ton is an outlay of exactly $13.50 per acre, while an application of 300 lbs. per acre of a fertilizer costing $50 per ton, is exactly an outlay of $7.50 per acre. From these considerations it is obvious that the *less costly* fertilizers are by far the most expensive, unless, indeed, they require no larger applications to produce similar results, or rather contain an equal amount of *Ammonia* and *Phosphate of Lime*, which cannot be the case.

REESE'S GUANO—What it Contains.

Reese's Guano contains 8 *lbs. Ammonia* and 50 *lbs. Phosphate of Lime* in every 100 lbs. of the Guano, and requires no larger application per acre than *Peruvian Guano* to produce equal or better results.

Reese's Guano is composed *exclusively* of *Peruvian* and *finely ground Sombrero Guano*, in proportions of *one-half each*. The guanoes are *uniformly* and *intimately* combined by machinery, perfected by *four years'* experience. *Sombrero Guano* is the most *uniform* and *richest* source of *Phosphate of Lime* known to the country; it contains an average of 75 to 80 per cent. and is uniform in quality.

Reese's Guano, composed as above, has been in use in Virginia, Maryland and the South, for *Tobacco*, *Wheat*, *Corn* and *Cotton*, during 1856, '57, '58, '59 and '60. It is known and approved, having passed through a period of four years probation, with largely increased and largely increasing demand. Its success has demonstrated the fact, that a *truthful* combination of *rich Phosphatic Guano* with an equal weight of Peruvian Guano, is a better, more *economical* and *convenient* fertilizer, than Peruvian Guano alone.

WHAT IT DOES NOT CONTAIN.

Reese's Phospho-Peruvian (or Manipulated) *Guano*, does *not* contain, either *Plaster*, *Salt*, (chloride Sodium,) *Ashes*, or any other substance, than the two Guanos, hence it is a *concentrated* fertilizer, rich in *Ammonia* and *Phosphate of Lime*. The addition of *Salt*, Plaster, &c. &c. to combinations of Guano, *reduces* their *value* and *increases* their *bulk*. Phosphate of Lime and Ammonia, are too valuable in *concentrated fertilizers* to give place to *Plaster*, which is worth $7 per ton, or Salt, worth 18 to 20 cents per bushel. *Plaster*, *Salt*, and other *bulky* fertilizers, should be applied separately, in such quantities per acre as experience teaches. They should be bought at their *market value*, and not in combination with Guano. Combinations of Guano, containing *Plaster*, *Salt*, &c. can readily be sold, at a lower price than a Guano containing none of these cheap and *bulky* articles, but it must be observed, much larger applications per acre are required, and hence, as is shown above, they are in fact nearly double the

cost. The object to be attained by the Farmer, is the greatest *value* in the least *weight* and *bulk*.

We prepare but *one article*, as above, being satisfied, after an experience of four years, it cannot be improved upon, and we assert that the same quantity of *Phosphate of Lime* and *Ammonia* can not be had in any fertilizer, in the *same condition*, at the same or less than the price of our article. Our machinery and facilities for *preparation*, *Delivery* and *shipment*, are unequalled by any establishment of recent construction, and we invite gentlemen visiting this city to examine our works and witness the preparation of the Guano.

JOHN S. REESE & CO.,
Baltimore, Md.

See advertisement on another page. ap

To Farmers and Others.

A PERUVIAN GUANO,
Direct form Agents Warehouse.
A A MEXICAN GUANO,
Very rich in Phosphate.
CALIFORNIA, SOMBRERO AND MANIPULATED GUANOS. TURNER'S EXCELSIOR SUPER PHOSPHATE OF LIME.
FINE, PURE BONE DUST,
GROUND PLASTER, &c.
SEED OATS AND CORN, CLOVER, TIMOTHY AND ORCHARD GRASS SEEDS—

At the very lowest rates, by

PETER ZELL & SON,
Nos. 147 and 149 N. Howard street,

☞N. B.—The highest market prices paid for all kinds of Grain. ap-2t

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SADDLE, HARNESS
TRUNK & COLLAR MANUFACTURER,
Wholesale and Retail,
No. 17 CALVERT STREET, below Lovely Lane,
BALTIMORE, MD.

Keeps constantly on hand, a large assortment of the above articles, made of the best materials and sells at the very lowest prices. ap-1y.

Chester Hogs, Brahmah Fowls, &c.

FOR SALE.—5 pair full Chester Pigs, from premium Sow.
2 Chester Sows, 1 year old, in pig, by premium Bore.
1 Sow, 2 years old, will weigh about 400 pounds, in pig.
1 Chester Boar, 22 months old, weigh about 300 pounds.
1 dozen Bee-hives with Bees. Brahmah Fowls.

1t C. WARNS, *Elkridge Landing.*

500 for $5.

STRAWBERRY PLANTS.

WILSON'S ALBANY, HOOKER, PEABODY, HOVEY and LARGE EARLY SCARLET.

100 of each of the above leading and excellent varieties—strong and vigorous—true to name—securely packed for any distance, delivered at Express Office for five dollars. *Catalogues gratis, send for one.*

EDWIN MARSHALL,
ap-1t *Pokeepsie Nursery, Pokeepsie, N.Y.*

Marblehead Drumhead Cabbage.

This Cabbage is by far the most popular and profitable kind sold in Boston market. It originated in the town of Marblehead, Mass., and holds the same rank among Cabbages as the Hubbard Squash among Squashes. It is distinguished *for its reliability for heading, and for its solidity of the head.* It is early, very fine grained, tender and sweet, with a remarkably short stump. Under good culture frequently every plant on an acre will set a marketable head. A package of the best variety of this Cabbage, the Stone Mason, will be forwarded, post-paid, for 25 cents. One pound of seed forwarded, post-paid, on the receipt of $4, and for $3 to persons paying their own freight. *I hereby offer $5 for one ounce of seed of our variety of Drumhead Cabbage that shall excel this.* My seed was raised from selected plants, grown wholly from the center shoot.

ap-2t JAMES J. H. GREGORY, *Marblehead, Mass*

Hubbard Squash Seed.

Having given this celebrated Squash its name, and having been the first to introduce it to public notice, I offer the purest seed raised at 12 cents for a package of from 40 to 50 seed, post paid to any part of the United States—California and Oregon, an extra dollar. Seed dealers supplied at a discount. The new Squash is recommended by Hon. Marshall P. Wilder, Hon. Edward Everett, and the entire Agricultural Press of New England, as the sweetest, dryest and richest flavored of all winter Squashes. Last fall it readily brought in the Boston market $30 per ton when the best Boston Marrow sold with difficulty at $15. The Hubbard Squash has succeeded admirally in New England; the West; in California, New York and other States.

ap-2t JAMES J. H. GREGORY, *Marblehead, Mass.*

Strawberries, Raspberries, Currants, Gooseberries, Grapes,

OF ALL THE LEADING VARIETIES.

The undersigned devoting his personal attention exclusively to the cultivation of the above Purchasers may rely on plants being *vigorous—true to name*—at low prices and packed with great care for any distance and satisfaction guarenteed in all cases.

Catalogues gratis, send for one.

EDWIN MARSHALL,
Pokeepsie Small Fruit Nursery,
ap-1t POKEEPSIE, N. Y.

BONE DUST AND POUDRETTE,

Warranted free from any mixture, having the Bone Dust in its natural or pure state. Fine or Stamped, by the bushel or ton.

POUDRETTE—A superior article and the cheapest Manure in the market, well adapted for Corn or any crop in the drill or hill.

REFERENCES:—John W. Randolph and N. B. Worthington, Baltimore; Thomas S. Mezeck and John Ridout, Annapolis; R. G. Browstor and J. Moull, N. Jersey. The above named practical farmers will testify to its merits.

FACTORY, Wilk street and Harris' Creek, Canton.

ORDERS left at the American Farmer office will be attended to. [d1] THOMAS BAYNES.

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S. WILLIS,
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Shipping and Commission Merchants
AND
BEEF AND PORK PACKERS,
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FARMERS AND DROVERS requested to address us in reference to Cattle and Hogs at all seasons.
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